

Rainwater Filters

PURAIN

- ▶ Catch the Most Rainwater
- ▶ Best Self Cleaning Filter
- ▶ Patented Hydraulic Jump Technology



Solving Water Problems One Building at a Time

Exclusive US Distributor

Ecovie
water management

PURAIN

Rainwater Filters



We designed the PURAIN Rainwater filter, sometimes known as the jump filter, for roof areas ranging from 500 to greater than 100,000 square feet. This filter automatically cleans itself with an hydraulic jump. The design of PURAIN rainwater filters comes from nature. Almost anywhere in a fast moving stream, you can see an hydraulic jump in action. The water flows over stones and drop offs. At the bottom of a dip, the water flow changes to a backroller or in more technical terms an hydraulic jump. The resulting increase in water power is similar to a strong eddy and any impurities are then forced over the next level and washed downstream. The same effect happens in a PURAIN filter to keep it clean with almost zero maintenance required.

INNOVATION

Best waterquality

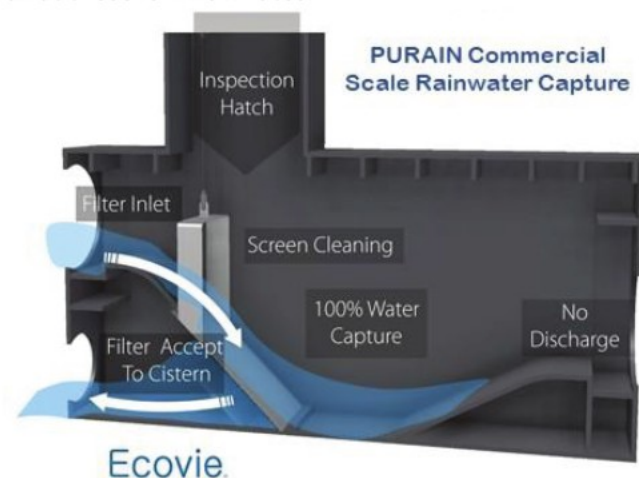
Good pre-filtration is critical to a well working rainwater collection system. PURAIN meets ASPE/ARCSA 63 requirements for rainwater pre-filtration and delivers clean water to the cistern.



The sturdy wedge wire screen assures adequate water quality with no large debris being able to enter the cistern. The trapezoidal shape and diagonally set orientation prevents the dirt from settling and clogging it.

Self Cleans with Highest Capture Efficiency

Low rainfall events account for almost all annual rainfall regardless of location. Therefore, it is particularly important that the filter be designed to collect this light rainfall. PURAIN catches 100% of the rainfall at these low flow rates.



High rainfall events contribute little water yield and are used by the PURAIN rainwater filter for self-cleaning. These high rainfalls lead to the formation of an eddy in the PURAIN rainwater filter, the so called hydraulic jump.

Hydraulic Jump in Action!



**4" PURAIN DN100**

For small roof sizes and greywater systems up to 1000 gallons per day. Includes a non-return valve, skimmer overflow.

**6" PURAIN DN150-S**

For larger homes, small commercial roofs and larger greywater systems. Versatile injection molded design for direct bury, wall, mount, and in-tank mount.

**8", 12", and 16" PURAIN DN200-400**

For larger roof sizes in wall mount and inside cisterns.

1 x DN400

**8", 12", and 16" PURAIN HD DN200-400**

Vehicle rated to 60 tons. Heavy duty construction can be buried to an invert of 9 feet.

1 x DN300, 1 x DN400

TECHNICAL**Best Capture Efficiency**

With 100% capture up to a high rainfall rate and vigorous cleaning in hydraulic jump, the most water is captured with the least maintenance.

Sizing

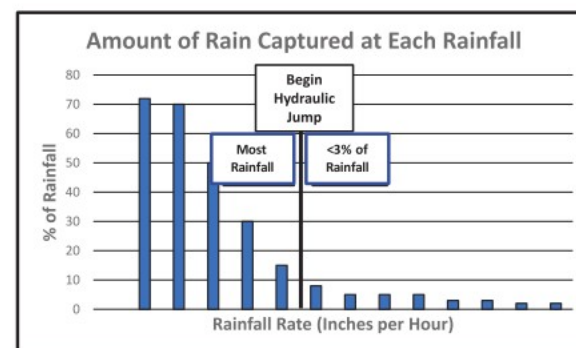
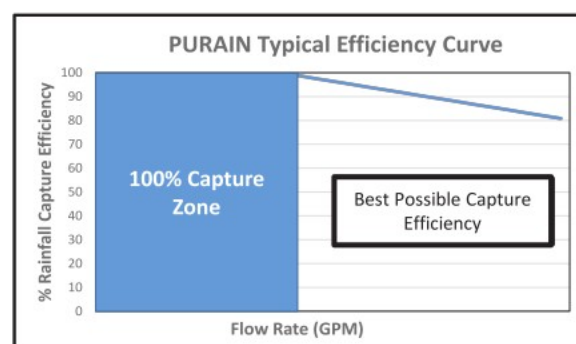
PURAIN comes in a wide range of inlet sizes from 4" to 16". The correct size is based on local rainfall intensity and roof square footage. See the color coded sizing chart at www.ecovierain.com.

Easy to Assemble, Install and Maintain

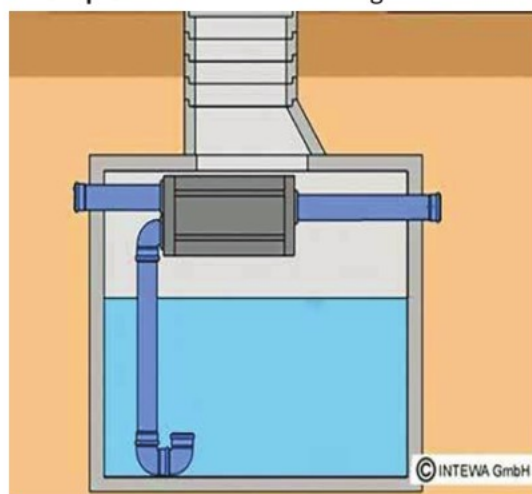
This filter typically requires lower maintenance compared to other self-cleaning rainwater filters due to the hydraulic jump design as well as the sturdy construction of the wedge wire sieve. Unlike other filters, no cleaning shower is required for rainwater applications.

Installation

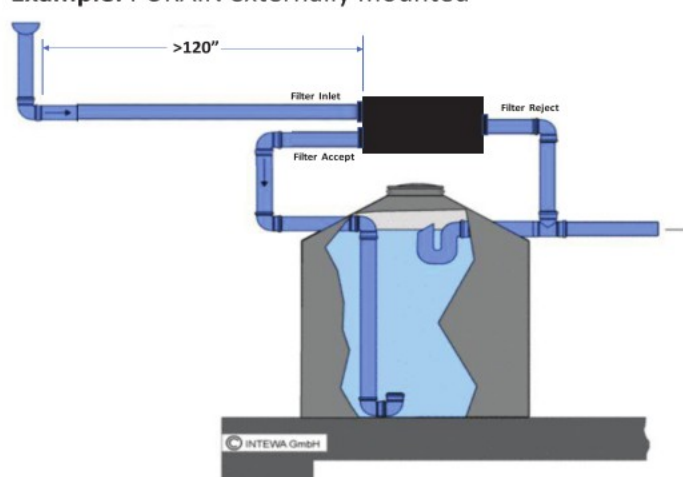
The best place to install a rainwater filter is in the tank. With low elevation loss, large PURAIN filters are suitable for installation in a tank, on a wall or directly buried in the ground with no vault required.



Example: PURAIN in an underground tank

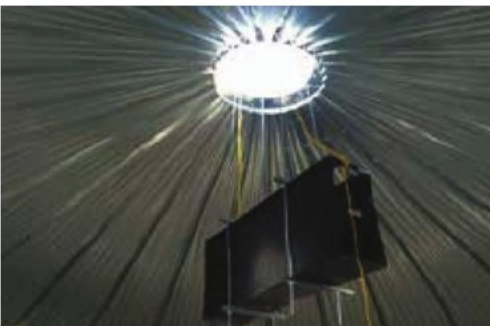


Example: PURAIN externally mounted



REFERENCES

More than 30,000 PURAIN filters are installed worldwide



Ecovie is the US distributor for
INTEWA GmbH, Aachen,
Germany
Manufacturer of AQUALOOP,
PURAIN, RAINMASTER, and
DRAINMAX.

Visit us at us.intewa.net



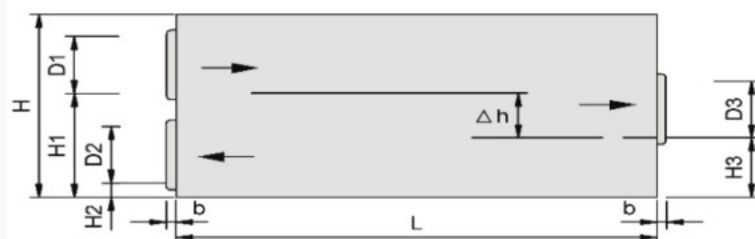
See examples of AQUALOOP
applications at:
<http://us.intewa.net/en/products/purain/references/projects/>

Your Local Dealer or Sales Representative:

Images & Specs.



Image of Filter



Specification Drawing

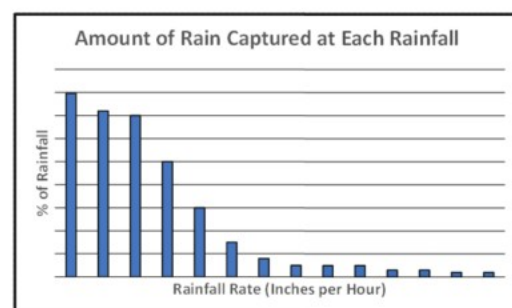
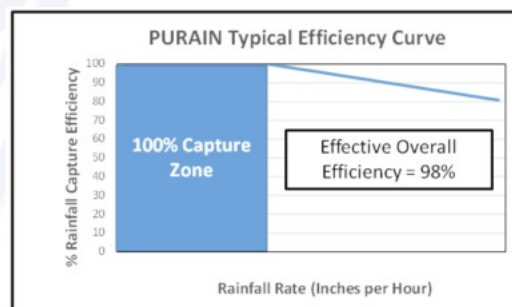
Description

PURAIN series DN200-400 rainwater filters, known as hydraulic jump filters, are the most efficient self-cleaning filters. This filter is suitable for in tank or external mounting. The vigorous self-cleaning from the turbulent hydraulic jump means minimal maintenance requirements. With 100% capture up to a certain rainfall rate which happens a few times a year, PURAIN far exceeds the efficiency of any other self-cleaning filter.

Tables & Graphs

Specifications	DN200	DN300	DN400
Rated Maximum Flow (DIN 1986)	576 GPM	1684 GPM	3600 GPM
Max. Flow for 100% Capture	175 GPM	240 GPM	511 GPM
Screen Size	800 Microns		
Rated Max. Roof Square Footage*	22000	47000	102000
Rated Efficiency	97%		
Recommended Connection Pipe Type	SDR 35 PVC		
D1: Feed Pipe Diameter	8"	12"	16"
D2: Filtered Water Accept Pipe Diameter	8"	8"	12"
D3: Reject Pipe Diameter	8"	12"	16"
H: Filter Height	25.98"	34.09"	40.35"
W: Filter Width	10.15"	12"	19.21"
L: Filter Length	58.86"	70.31"	80.43"
Δh: Feed to Reject Offset Height	7.48"	10.67"	13.62"
H1:	16.77"	19.64"	22.51"
H2:	1.30"	2.09"	2.12"
H3:	9.67"	8.98"	8.90"
b:	1/2"		
Filter Weight	57.2 LB	105.6 LB	143 LB

* Not to be used for filter sizing, for maximum limit only



Graphs that show why PURAIN captures more water

Hydraulic Jump

Water from the rooftop gravity feeds to the PURAIN filter cascading over the 800 micron filter screen. Clean water goes through the screen to the tank and debris is kept out. Water capture efficiency is 100% until the flow rate is high enough that the water level in the jump zone reaches the overflow point. When rainfall reaches a higher flow, which it will do 2 to 6 times a year, all debris is flushed out and the turbulence of the hydraulic jump vigorously cleans the screen. This assures minimal maintenance requirements if the filter is sized right. Until the hydraulic jump happens, every drop of rainwater coming to the screen is captured and filtered. All other self cleaning pre-filters have some water loss at any flow rate. Since most rain falls at below the hydraulic jump rate, PURAIN filters have the highest efficiency possible.



Standard filters come without a cover. We can supply a watertight cover for indoor installations

Hydraulic Jump Diagram

Sizing

As with any self cleaning filter, the proper size must be selected to assure optimal water capture, cleaning, and water handling. We recommend the following steps in sizing your PURAIN filter. Do not use standard roof size rating as they will not work in every location.

- 1.) Use listed maximum flow listed on the specification sheet above. This flow assumes the feed pipe is 70% full and at a 1.5% fall. This gives some conservatism for what the filter can actually handle hydraulically.
- 2.) Use NOAA rainfall intensity to decide the flow rate at your project site. The data can be found at <http://hdsc.nws.noaa.gov/hdsc/pfds/> Use the 5 minute intensity interval on the 1 year event. Do not size for higher intensity rain events as it will lead to suboptimal performance and will not increase water capture appreciably.
- 3.) To handle water flows in excess of the maximum flow install (if necessary) a bypass line. This will not be necessary if piping or filter overflows cause no problems. If possible, we recommend in tank mounting.

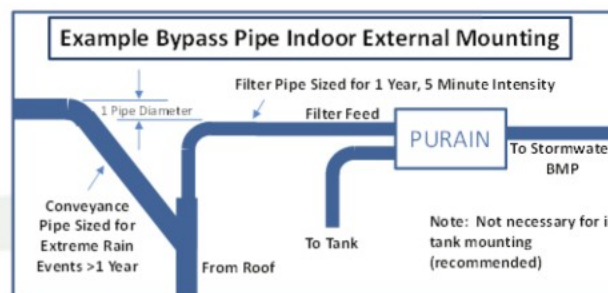
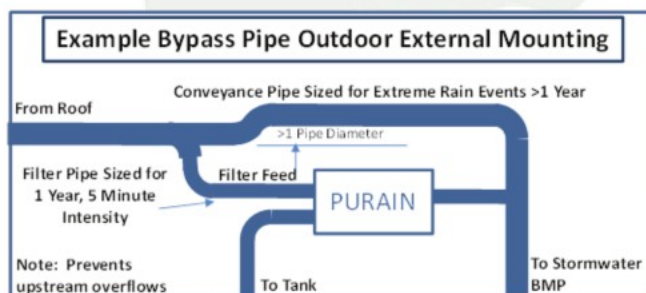
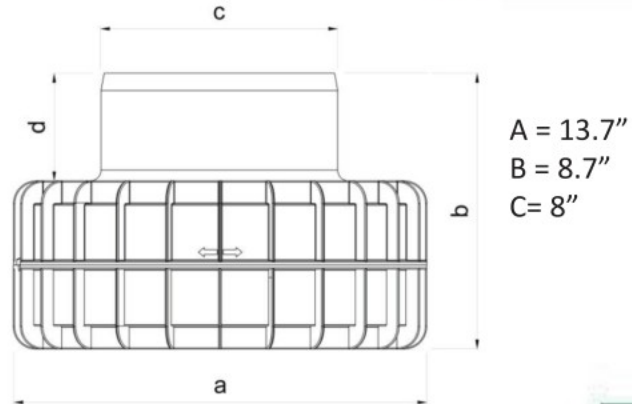


Image & Specs.



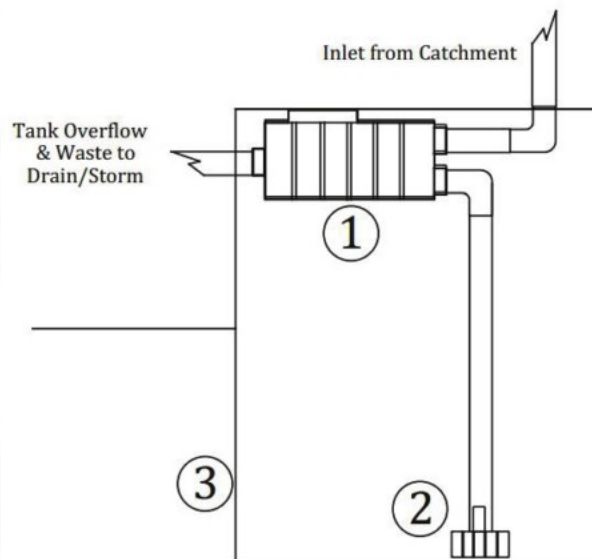
Image of Product



Description

The PLURAFIT PF 300-200 Calming Inlet meets ASPE 63 requirements for rainwater collection best practices. By introducing rainwater to the bottom of the tank, any accumulated sediment is undisturbed while water is aerated by the incoming rainwater. Beneficial biofilm is rejuvenated and allowed to grow. The PLURAFIT DN-200 allows periodic cleaning if necessary by removal of the bottom bowl without complete removal. Any 8" pipe can be attached with a rubber coupling.

Diagram



Feed Pipe Diameter	8"
Design Flow	>80 GPM
Unit Height	8.3"
Unit Diameter	13.7"
Connection	Male
Pipe Connection	Any 6"

- 1 – DN200 or 300 PURAIN
- 2 – DN200 Calming Inlet
- 3 – Cistern

Compatibility

The PLURAFIT DN 200 Calming inlet is designed to be installed in conjunction with the PURAIN DN200 and DN300 with 8" accept pipe diameters.

PLURAFIT Calming Inlets are also available in 4" and 6" sizes.



PURAIN DN200-300



Description

The Rainmaster floating suction filter ensures that the cleanest water, from just below the surface, is always drawn from the tank. Its built-in filter protects the pump as well as toilet and washing machine inlet valves, against potential contaminants in the tank water. The filter mesh width is selected to ensure maintenance intervals are minimized. The brass backflow valve prevents the intake line from running dry. Come in ½", 1", and 1 ½" sizes.

Data

<i>Specifications</i>	<i>1/2"</i>	<i>1"</i>	<i>1 1/2"</i>
Filter Diameter	0.75"	1.38"	2.64"
Filter Length	0.98"	1.57"	3.74"
Screen Mesh Size	1000 Microns	1270 Microns	1270 Microns
Bouyancy Ball Diameter	5.91"	5.91"	5.91"
Bouyancy Ball Material	Polyethylene	Polyethylene	Polyethylene
Hose Connection (barbed)	0.5"	1.0"	1.5"
Materials	S.S., Brass, PE	S.S., Brass, PE	S.S., Brass, PE



Electronic Level
Indicator



Calming Inlet



Auto Back Up

Accessories

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