

Humes Sand Filter keeping our environment clean



Stormwater management and treatment device – designed to meet ARC TP10 (2003) requirements*

For capture of:

- 75% of total suspended solids
- Oil and grease on sediments
- Coarse sediments

Sand filtration has been demonstrated to be both an economical and effective option for removing pollutants.

Applications

- Commercial and industrial car parks
- High density residential housing
- Motorways and Transit applications
- Vehicle service centres
- Other situations where high stormwater sediment loads exist

Features

- Meets ARC TP10 (2003) design requirements
- Removes 75% of total suspended solids
- Live storage capacity of 37% of the Water Quality Volume
- Bypass flow capability
- Small footprint
- Low head loss
- Easy installation
- High sediment capacity

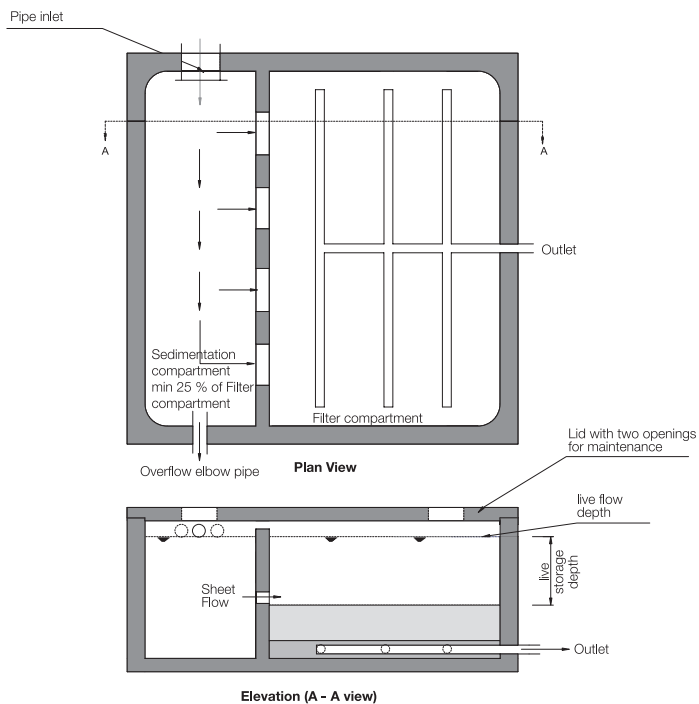
Benefits

- Positive environmental impact
- Suitable where space is constrained
- Cost effective
- Low maintenance costs
- Simple technology

*TP10 is a design guideline manual for Stormwater Management Devices published by the Auckland Regional Council



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Sand Filters are composed of two components: a sedimentation chamber and a filtration chamber.

The sedimentation chamber removes floatables and coarse sediments, while the filtration chamber removes fine sediments and additional pollutants by filtering flow through a sand bed.

Treated filtrate is normally diverted back to the storm drainage system via a pipeline network system.

Pollutants such as suspended solids are effectively removed from stormwater flows when treated by a sand filter system. Many metals dissolve or precipitate in response to changes in water chemistry.

Design

The size of the Sand Filter is determined by the combined permeable and impermeable surface areas of the catchment requiring treatment and the design storm to be stored and treated. While the total volume of the Sand Filter for a particular application will stay the same, the depth and footprint can be varied proportionately, according to space-constraints. The design incorporates an overflow opening to prevent flooding in case of storm events greater than the design storm.



Buyers and users of the products described in this brochure must make their own assessment of the suitability and appropriateness of the products for their particular use and the conditions in which they will be used. All queries regarding product suitability, purpose or installation should be directed to the nearest Humes Sales Centre for service and assistance. © Fletcher Concrete and Infrastructure Limited 2006. Printed 07/06.

Catchment area (sqm)	Humes Sand Filter Code	Box Size (mm)	Internal Height (mm)	Total Mass (tonnes)
500	HSF 500-B1500	3000 x 2000	1500	13.91
	HSF 500-B2950	2000 x 1000	2950	11.99
750	HSF 750-B1500	3000 x 3000	1500	17.86
	HSF 750-B2400	2000 x 2000	2400	13.99
1000	HSF 1000-B1500	4000 x 3000	1500	22.15
	HSF 1000-B2950	2000 x 2000	2950	16.14
1250	HSF 1250-B2000	3500 x 2500	2000	20.65
	HSF 1250-B2950	2500 x 2000	2950	18.56
1500	HSF 1500-B2050	4000 x 2500	2050	23.16
	HSF 1500-B2950	3000 x 2000	2950	20.98
1750	HSF 1750-B2000	4000 x 3000	2000	25.45
	HSF 1750-B2500	3000 x 3000	2500	23.47
2000	HSF 2000-B2200	4000 x 3000	2200	26.76
	HSF 2000-B3050	3000 x 2500	3050	23.99

Note: Sand Filters for larger catchment areas are available on request. Alternative designs for smaller units are also available

See table above for a specification on catchment areas and the relevant Sand Filter unit sizes. (Based on a 100% impervious surfaces and typical two year ARI design storm, live storage capacity of 37% of WQV). Standard range has been reviewed by ARC.

Installation

Humes Sand Filters are made of modular precast concrete units with factory pre-assembled internal fittings, all ready to be placed into the excavated ground and connected to the drainage system. All internal filtration media and drainage pipe can be supplied to site separately.

Maintenance

Sand Filters have demonstrated service life and consistent pollutant removal when properly maintained. Maintenance for Sand Filters is simple and inexpensive.

Normal maintenance requirements include raking of the sand surface and disposal of accumulated trash. The upper few inches of dirty sand must be removed and replaced with clean sand before the filter clogs. The sedimentation chamber must be cleaned to remove sediment and debris.

Manufacturing standards

Precast manufacture is to NZS 3109:1997 with surface finishes to NZS 3114:1987, F4 and U2 for formed and trowelled respectively.

For further details please contact your local Humes Sales Representative.

