

# Media Filters

Versatile high quality Media Filters solution for depth filtration applications



flowrates standard vessels

**up to 75 m<sup>3</sup>/h  
(330 gpm) per unit**

diameters standard vessels

**20" / 24" / 36" / 48"**

tested pressure

**8 bar (116 psi)**

## features:

- Complete filtration solutions; Custom designed, manual or automatic backwash systems, complete with manifolds, valves and controllers
- Modularity and flexibility, wide range of vessel types and sizes suitable for many filtration applications
- High quality corrosion resistance vessels, Phosphate pre-treated, Polyester coated steel
- High efficiency; Advanced design for perfect water distribution during filtering and backwashing
- All filters are rated up to 8 bar (116psi)
- Various bed types, Sand, Gravel, Activated Carbon, Anthracite, Basalt, etc.
- Grooved in/out connection types

## How the MEDIA Filters Work

### General

With its MEDIA filters line Amiad provides a complete solution for depth filtration requirements.

Amiad's MEDIA filter-vessels are high quality corrosion resistant, polyester coated steel tanks. These modular vessels are Phosphate pre-treated, tested for maximum pressure of 8 bar and are available in wide range of types and sizes for flexibility and custom designed applications. Amiad MEDIA vessels are designed for perfect water distribution during filtering and backwashing, providing high filtration efficiency.

In addition to the high quality vessels, Amiad's MEDIA filters line consists of the necessary accessories for constructing a fully operational filtration application, a complete line of manifolds, standard connectors, valves, granular media types and control systems.

Amiad's MEDIA filters use various granular bed types for perfect matching with the raw water type and the filtration degree required. Other bed types include various grades of sand, gravel, activated carbon, anthracite and basalt. Multi-layer bed types can also be supplied according to the design requirements of the customer application.

Amiad provides excellent design & service capabilities for helping our customers to acquire the best solution for their custom designed manual or automatic backwash system, complete with manifolds, valves and control requirements.

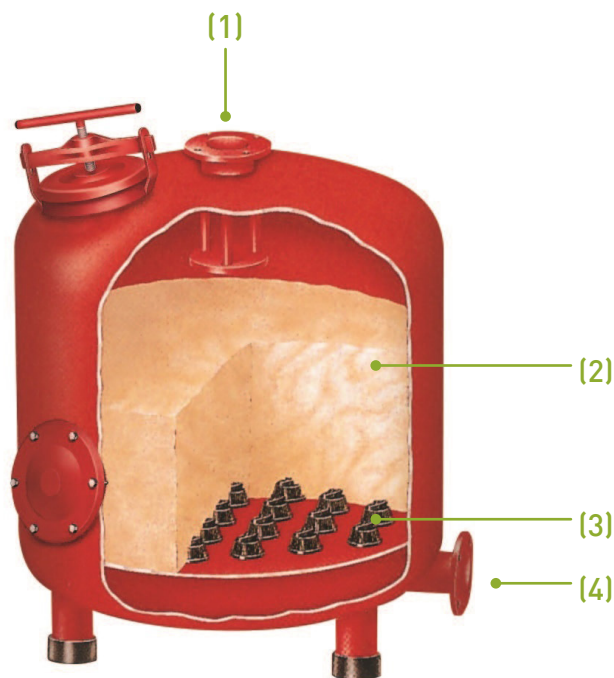
A typical depth filtration installation is assembled from several media vessels connected together to form a filtration battery. The number of the vessels, the diameter of the manifolds and the size & number of the valves depend on the required flowrate, raw water quality and the required filtration degree of the system. Please consult your Amiad dealer for the best design.

Amiad's on-the-shelf standard vessels support flowrates of 13-75 m<sup>3</sup>/h (57-330 gpm) per unit, with various filtration degrees and vessel inlet/outlet connections of 2"-4" in diameter. Other sizes are available upon request.

### The Filtering Process

Filtering with media filters, also known as depth filtration, is done by filtering water through a thick layer of graded particles, called the filter bed. These particles can be sand, gravel or other granular materials. The filtration degree depends on the effective size of the bedding and the water velocity through the filter.

Raw water enters from the filter inlet (1) and percolates through the filter bed (2). Suspended materials come into contact and attach to the media particles. Filtered water flows through the filtration nozzles (3) and out through the filters outlet (4).



### **The Cleaning Process**

Cleaning is done by backwashing; pressurized water flows in reverse direction – from the nozzles upwards, causing suspension of the filter bed, thus releasing the suspended matter from the bedding. The dirt particles are then washed out of the filter through the back-flush valve. In automatic media filters installations the cleaning process is done by the system's controller. When the pressure differential switch senses that the differential pressure across the system reached a pre-set value, a signal is sent to the flushing controller and the self cleaning process begins.

### **The Control System**

Amiad supplies several control systems for its MEDIA filters such as Electrical Control Boards, Programmable Logic Controllers (PLCs) and Amiad's proprietary AC/DC Flushing Controllers for supporting any size of media filters installation, starting at a single vessel and ending at very large filtration batteries.

Amiad control systems starts the self-cleaning cycle under any one of the following conditions:

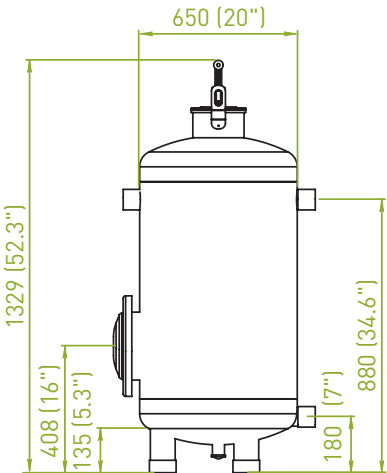
1. Receiving a signal from the Pressure Differential Switch
2. Time interval parameter set at the control system
3. Manual Start

### **Amiad "MEDIA" Filters Models**

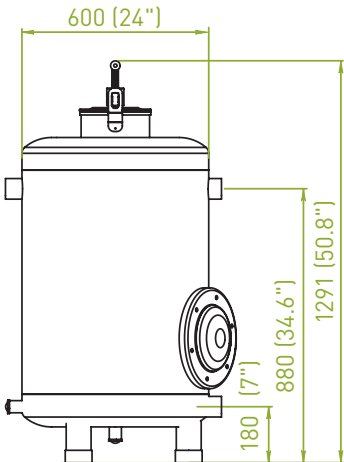
Amiad's "MEDIA" product-line consists of standard on-the-shelf vessel units and specially designed vessels and systems. The following is a list of the standard vessels:

- 20" for up to 13 m<sup>3</sup>/h (79 gpm)
- 24" for up to 20 m<sup>3</sup>/h (110 gpm)
- 36" for up to 42 m<sup>3</sup>/h (220 gpm)
- 48" for up to 75 m<sup>3</sup>/h (396 gpm)

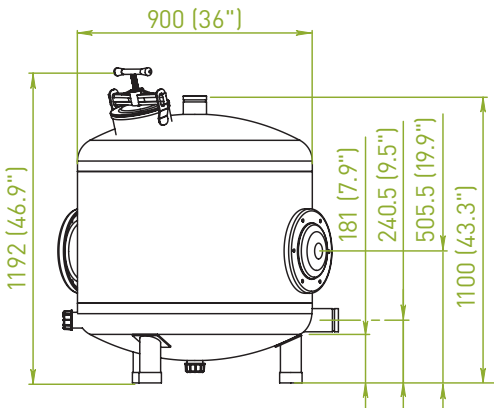
20"



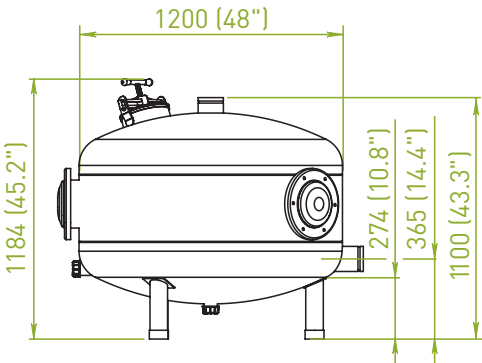
24"



36"



48"



Dim: mm (inch)  
\*Approx. length required for maintenance

Technical Specifications

Filter Type	20"	24"	36"	48"
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General				
Flowrate range*	9-13 m³/h (40-57 gpm)	14-20 m³/h (62-88 gpm)	28-42 m³/h (123-185 gpm)	51-75 m³/h (224-330 gpm)
Vessel diameter	20" (500 mm)	24" (600 mm)	36" (900 mm)	48" (1200 mm)
Inlet/Outlet diameter	2" (50 mm)		3" (80 mm)	4" (100 mm)
Max. working pressure	8 bar (116 psi)			
Max. working temperature	60°C (116°F)			
Vessel weight [empty]	75 kg (156 lb)	110 kg (242 lb)	160 kg (352 lb)	275 kg (605 lb)
Vessel volume	150 liter (39.6 gallon)	275 liter (72.6 gallon)	493 liter (130 gallon)	937 liter (387 gallon)

\* Consult Amiad for optimum flow depending on filtration degree & water quality.

Flushing Data				
Minimum flow for flushing	17 m³/h (75 gpm)	26 m³/h (114 gpm)	54 m³/h (238 gpm)	96 m³/h (422 gpm)
Flushing time	60 - 120 seconds			
Exhaust valve	2" (50 mm)		3" (80 mm)	4" (100 mm)
Flushing criteria	Differential pressure of 0.5 bar (7psi), time intervals and manual operation			

Bed Data				
Depth	15.7" (400 mm)			11.8" (300 mm)
Weight (basalt no.1)	125 kg (257 lb)	200 kg (440 lb)	375 kg (825 lb)	550 kg (1210 lb)
Graded gravel	Volcanic basalt no. 1			

Construction Materials *	
Filter vessel	Phosphate pre-treated, Polyester coated steel
Seals	NBR
Filter covers	Phosphate pre-treated, Polyester coated steel
Nozzles	Polypropylene

\* Amiad offers a variety of construction materials. Consult us for specifications.

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