

## THE BEST FILTRATION MEDIA



### POWERFUL FEATURES



**Self-sterilizing surface**  
resistant to bacterial growth



**Increased surface area** for  
superior filtration properties



**Activated surface charge** for  
the adsorption of fine particles  
and organic matters

### WHAT IS AFM<sup>®</sup> ?

Result of 35 years of Research & Development, AFM<sup>®</sup> (Activated Filter Media) is a direct replacement for sand that can be installed in all types of sand filters without modifications.

Manufactured from green and brown glass, AFM<sup>®</sup> is exposed to a unique activation process to **become self-sterilizing and acquire superior mechanical & electro-static filtration performance.**

Our latest AFM<sup>®</sup>ng media has hydrophobic surface properties designed to capture hydrophobic contaminants (organics, lipids, fats and oils) and is even better suited for aquarium and aquaculture use.

### UNIQUE BENEFITS

- ▶ **The safest water** : Prevents the transmission of pathogens
- ▶ **The clearest water** : Offers a stable 1 micron filtration rate.
- ▶ **The lowest operating costs** : Saves backwash water and chemicals.
- ▶ **The most sustainable filtration** : Outlasts all other filter media.
- ▶ **The healthiest air** : Prevents the formation of DBP's and chlorine smells in chlorinated mammal and bird systems.



AFM<sup>®</sup> is the only glass filter media certified for NSF/ANSI 50, NSF/ANSI/CAN 61 by WQA for drinking water

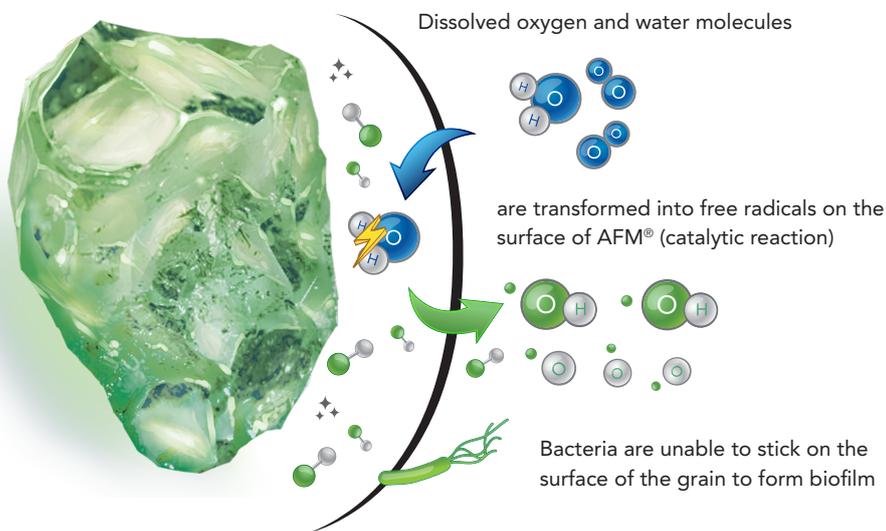


Tested and certified as the best filtration media by the IFTS.



## THE HEALTHIEST WATER QUALITY

### ► Self-sterilizing surface fully resistant to bacterial growth

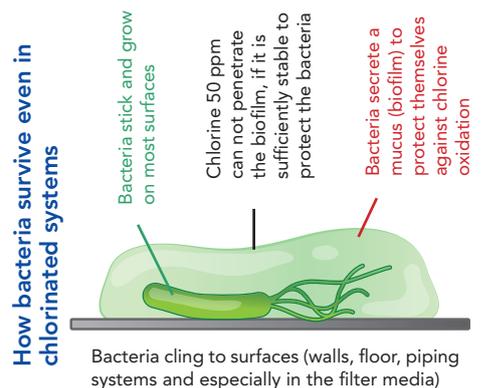


### ► Fish Systems:- Stable 1µm filtration with AFM®ng:

Sand is a good mechanical filter but also provides a perfect support for bacterial growth as every grain of sand is colonised by bacteria within a few days. Mechanical filtration is compromised by bacterial nitrification that consumes oxygen from the water, depresses the pH and causes anaerobic coagulation of the sand. Clogging causes channeling of the bed and sporadic release of filtered material and undesirable pathology into the process water.

### Unique 100% bio-resistant filter media

One of the main differences between AFM® and other filter media such as sand and crushed glass is its bio-resistance. When in contact with water flowing through the filter, a small amount of free radicals (O<sup>•</sup> and OH<sup>•</sup>) are formed on the surface of the grains. **Thanks to their strong oxidation potential, free radicals protect AFM® from colonisation by bacteria and fully prevent the formation of biofilm.**

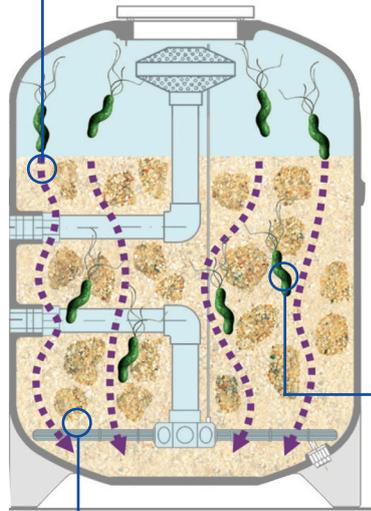


# The 3 main problems of biofilm

## 1 INCONSISTANT AND UNRELIABLE FILTRATION

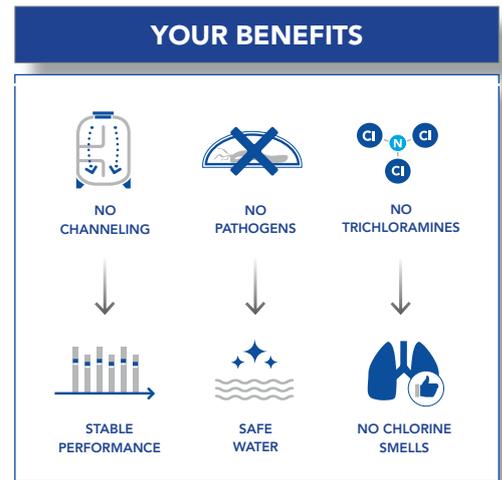
After 6 – 12 months, biofilm on the sand has developed to a degree where the grains stick together, forming clumps and causing channeling of the filter bed that reduce filtration performance and allow unfiltered water to reach the bathers.

**Filtration performance with AFM® is predictable, reliable, and remains stable over the years. There is no possibility of unfiltered water reaching the pool.**



## 2 PATHOGENS

The filter becomes a breeding ground for pathogens, such as Legionella, Cryptocaryon and Vibrio. Periodically, bacteria flocs will break through the filter. **AFM®ng prevents the growth and the transmission of these pathogens. Exhibit water is therefore much safer.**



## 3 CHLORINATED MAMMAL SYSTEMS - LESS TRICHLOROMINES

Bacteria in the biofilm convert urea to ammonia which then reacts with chlorine to form inorganic chloramine (mono, di- and trichloramine) and trihalomethanes. Trichloramines are responsible for the unpleasant chlorine smell and also present a severe animal health hazard.

AFM® does not support bacteria and there will therefore be no biofilm and hence no pathogens housed within it. If there are no bacteria urea will remain in the water and reacts with chlorine to form harmless, odourless chlorurea.

**No bacteria** ▶ No biofilm less trichloramines ▶ No chlorine smell ▶ No pinniped eye irritation  
▶ No cetacean pulmonary irritation ▶ No walrus skin irritation.

**No bacteria** ▶ Lower chlorine demand ▶ Less chlorine consumption ▶ Less Disinfection By-Products (DBP's)

## THE HIGHEST PERFORMING FILTER MEDIA

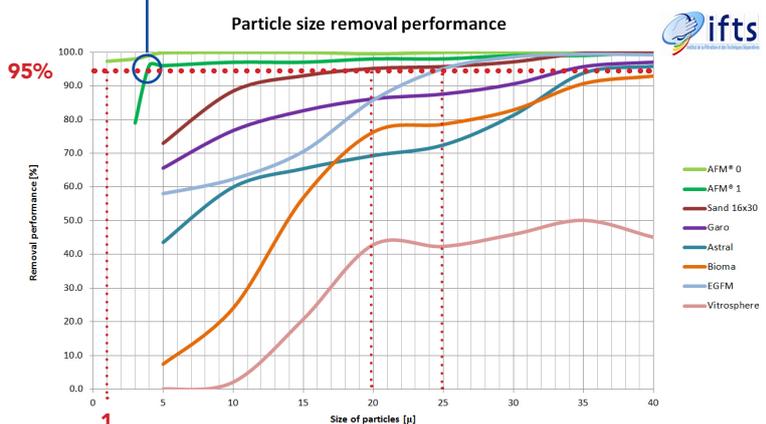
### ▶ AFM®ng offers the finest filtration

AFM® filters much finer than quartz or glass sand. The independent and best-known laboratory for filtration tests IFTS ([www.ifts-sls.com](http://www.ifts-sls.com)) has tested AFM®, quartz sand and various glass sands. The tests were conducted with fresh filter media without any biofilm.

At 30m/h filtration velocity, without the addition of flocculants, the following results were achieved:

- **AFM®ng:** Filters 95% of all particles down to **1 micron**.
- **AFM® s:** Filters 95% of all particles down to **4 microns**.
- **Sand:** Filters 95% of all particles down to **20 microns**.
- **Glassand:** Filters 95% of all particles **>25 microns**.

### AFM®ng: A certified 1 micron filtration efficiency



# WHAT MAKES AFM® PERFORM BETTER THAN OTHER FILTER MEDIA ?

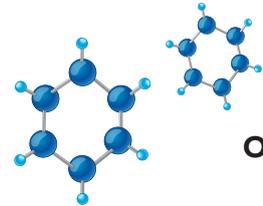
## Superior mechanical filtration and adsorption properties

### MESOPOROUS STRUCTURE

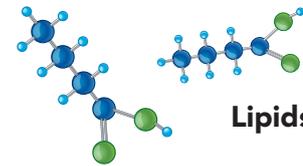
Our patented activation process creates a mesoporous structure to strongly increase the surface area (m<sup>2</sup>) of AFM® in contact with water. This feature enables AFM® to **mechanically capture more particles than sand and other glass filter media** and offers a much larger surface for the adsorption of fine particles.



Organic substances



Oils



Lipids

### ACTIVATED SURFACE CHARGE

Our activation process modifies the surface charge of the glass to give AFM® unique adsorption properties. The activation of the glass enables AFM® to remove particles down to 1 micron and **about 50% more organic substances than sand and other glass filter media**.



SCAN TO SEE ACTIVATION!

## WHY IS ACTIVATION IMPORTANT ?

### ▶ Reduced chlorine consumption

It is easy to remove large particles but it is the sub 5 micron that are difficult to remove and in this particle size range AFM® excelled. Everything that can be filtered out and removed in the backwash process doesn't have to be oxidised with chemicals. The greater filtration efficiency of AFM® therefore saves chlorine and acid. **Chemical savings are approximately 20% to 30%.**

### ▶ Crystal clear water and the best air quality

Chlorine is an excellent disinfectant. But in reaction with organic substances it also produces undesirable, toxic reaction by-products called Trihalomethanes (THMs), including chloroform. Thanks to its very large activated surface, AFM® can remove far more organic substances than sand or glass sand. The better the filtration - the lower the chlorine consumption and less disinfection by-products are produced. **AFM® reduces by up to 50% the formation of chloroform and other THMs.**

### BENEFITS

1  
MICRON

ULTRA FINE  
FILTRATION



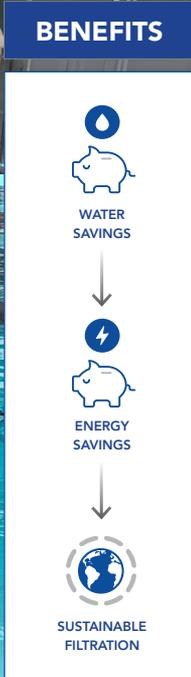
EXCEPTIONAL  
WATER CLARITY



↓ Cl  
LESS  
CHEMICALS



↓ THMs  
UP TO 50%  
LESS THMs



## THE LOWEST OPERATING & MAINTENANCE COSTS

### ► Up to 50% less backwash water

Sand needs to be backwashed at 60m/h for 5 minutes or longer. **AFM® only needs 35 to 50m/h backwash velocity.** The backwash efficiency is higher, because no biofilm is coagulating the grains and a backwash duration of 4 minutes is enough to remove all particles. As a result, approx. 50% of the backwash water can be saved.

### ► Filter maintenance

A major cost factor is the cost of replacing the media (removal, disposal and filling with new media). These costs are the same for AFM® and sand, but the life expectancy of AFM® is much higher than sand. **AFM® outlasts all other filter media and offers a guaranteed return on investment.**

## ADAPTED TO ALL TYPES OF SAND FILTERS

### ► For the best filtration results and energy savings :

Use ideally AFM® with a variable speed pump and set your pump's speeds as follows using a flowmeter :

**Filtration speed : 15 - 30m/h**

Calculation:

flow rate ÷ media surface area

**Backwash speed : 35 - 50m/h**

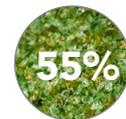
Calculation:

flow rate ÷ media surface area

### ► Important note:

For smaller filters (<800mm diameter) and for all filters with nozzle plate beds, irrespective of filter diameter, use **55% of AFM®ng Grade 1 and 45% of AFM®ng Grade 2.** AFM® 3 is required for larger diameter filters to ensure adequate water flow. AFM® is supplied in 25kg bags or 1000kg big bags.

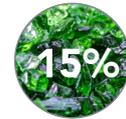
**GRADE 1**  
0.4 - 0.8 mm



**GRADE 2**  
0.7 - 2.0 mm



**GRADE 3**  
2.0 - 4.0 mm



**25kg of sand  
=  
21kg of AFM®**



# THE MOST SOPHISTICATED AND SUSTAINABLE MANUFACTURING PROCESS

Our production is the most sophisticated glass processing factory in the world. **We produce 100% of the power needed to run the factory** using solar panels and heat recovery systems. The glass is **washed in a unique sustainable loop using rain water**. We optimise every part of the process to make the best material available, with the best shape and size for our applications. We ensure that our product has no sharp edges that can injure you or damage the filter.

1



## MADE FROM RECYCLED GLASS

**When mining sand, landscapes are destroyed and entire ecosystems disappear.** Processing and transport are energy inefficient. AFM® is manufactured from recycled glass, a raw material that already exists and needs to be reused.

2



## THE PUREST GLASS

AFM® is cleaned, washed and sterilized to become the purest glass filter media on the market with a maximum loose **organic contamination of 5g/ton**. Normal glass sand has up to 20,000g/ton.

3



## CAREFULLY SELECTED

We only use green and brown glass in the manufacture of AFM® because white glass does not contain the metal oxides needed to make the media self-sterilizing. **AFM® contains more than 98% green and brown glass.**

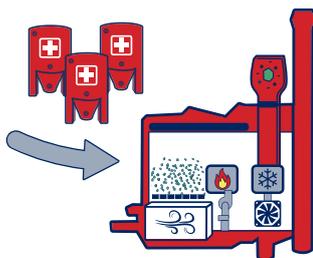
4



## OPTIMUM SIZE & SHAPE

The grading process of AFM® has been engineered to obtain a **precise consistent particle size and shape**. The sphericity and uniformity coefficient are crucial for the outstanding hydraulic properties of AFM®.

5



## UNIQUE ACTIVATION PROCESS

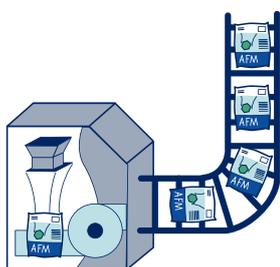
The raw AFM® goes through a **unique three-step chemical and thermal activation process**. The Activation is the reason for its bio-resistance and superior filtration properties. The surface of AFM® ng becomes hydrophobic.

6

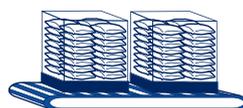
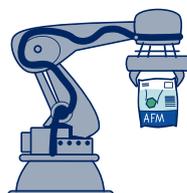


## MOST CERTIFIED FILTER MEDIA

AFM® is manufactured under ISO9001-2008 conditions and is certified under DWI EC Reg31, NSF50 & NSF61 **for swimming pools and potable water use** and HCAAP certified **for food and drinks markets**.



## EXPORTED TO 80+ NATIONS AROUND THE WORLD



# SAVE THE OCEANS, SAVE THE PLANET!



Dryden Aqua supports  
**GOES Foundation** to  
save coral reefs and  
restore plankton levels  
in our oceans



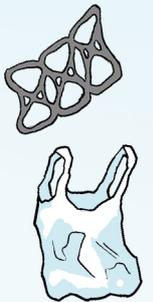
## 70% of the oxygen we breathe is generated by plankton

These microscopic plants (phytoplankton) and animals (zooplankton) absorb more than 50% of our CO<sub>2</sub> emissions. They are the basis of our food chain and the lungs of our planet. Quite simple, All life on Earth depends upon plankton.

**A clean ocean is the most efficient way to fight climate change at the lowest cost.**

## Toxic chemicals and microplastics are killing our plankton

Over the last 50 years, we have killed 50% of our plankton (Source: NASA). Some of the worst killers are Oxybenzone, PCBs, PBDE, Methyl Mercury, DBT & TBT. Once in our oceans, these chemicals mix with microplastics and stick to them. When the plankton eat the microplastics, the toxic chemicals enter plankton and kill them.



**In a clean ocean, plankton will be able to recover super fast and absorb double the amount of CO<sub>2</sub> !**

## WHAT WE CAN DO TO STOP CLIMATE CHANGE

### USE OCEAN SAFE SUNSCREEN

Over 10,000 tons of sunscreen gets dumped in our oceans each year. 1 bottle of sunscreen containing Oxybenzone will kill coral in an area the size of 10 olympic pools. Switch to sunscreens that contain Zinc oxide and titanium dioxide. Do not use sunscreen containing oxybenzone, octinoxate or Ethylhexyl Methoxycinnamate.

### USE OCEAN SAFE BEAUTY PRODUCTS

Stop using toothpaste containing Triclosan. A 100g tube of toothpaste containing 0.5% triclosan would kill all plankton life in a volume the size of 50 Olympic sized swimming pools!

Avoid using beauty products that contain Polyethylene and polypropylene like exfoliating face wash. 1 tube can contain up to 300'000 plastic microbeads.

### IMPROVE OUR WATER TREATMENT

Public wastewater treatment plants currently fail to remove 90% of toxic chemicals in the wastewater and they build up in the marine ecosystem.

Adding tertiary treatment to wastewater will deliver a 10 fold reduction of chemical pollution.

The cost would be about 200 - 400 US dollars per person only!

**There is 20,000 tonnes of Oxybenzone used in sunscreen every year, sufficient to kill all marine life in all the oceans if it were added all at the one time. Life on earth cannot continue, if we lose all life in the oceans, but this will happen in 25 years unless we stop the pollution.**

# DRYDEN AQUA

DISTRIBUTION

SUSTAINABLE  
WATER  
QUALITY



Watch our AFM®  
e-learning video



Dr. Dryden is a marine biologist specialising in swimming pool water treatment. His mission is to eliminate toxic disinfection by-products and provide the best air and water quality on the market. For over 35 years, Dr. Dryden has been working with chlorinated systems for Dolphins and other aquatic mammals before successfully introducing his technology to the pool industry. Today, as a testament to the performance, safety and benefits of his water treatment solutions, over 100 public Aquaria worldwide are using Dryden Aqua products.