Guglatech Ultra 4 Air Filters For Motorcycles

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You may ask yourself what is the first picture all about, well, it's a collection of the available Air Filtration Technology that you have on your bike, unless you're one of the SMART riders who already implemented a Guglatech ULTRA 4 air filter on your bike.

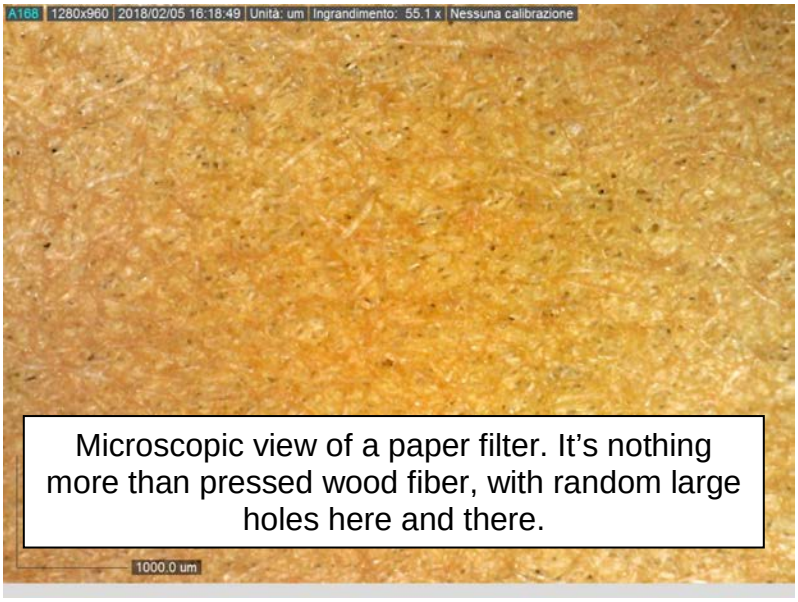
Good on YER!!!!

As for the rest of you, let me explain what, and why, is in the picture at right.

Let's state the obvious, there are flat and thick examples of air filtration technology:

- Paper filtration, namely the vacuum cleaner paper bag filter
- Cotton, a used gym sock
- Foam, a brand new dish washing sponge
- Flat grid, in this case it’s my beloved tea sieve

Enclosed in the picture at right you have all the technology that is still used on any kind of vehicles with internal combustion engines… **EXCEPT for the Guglatech Deep 3D Air Filter Matrix ULTRA4.**



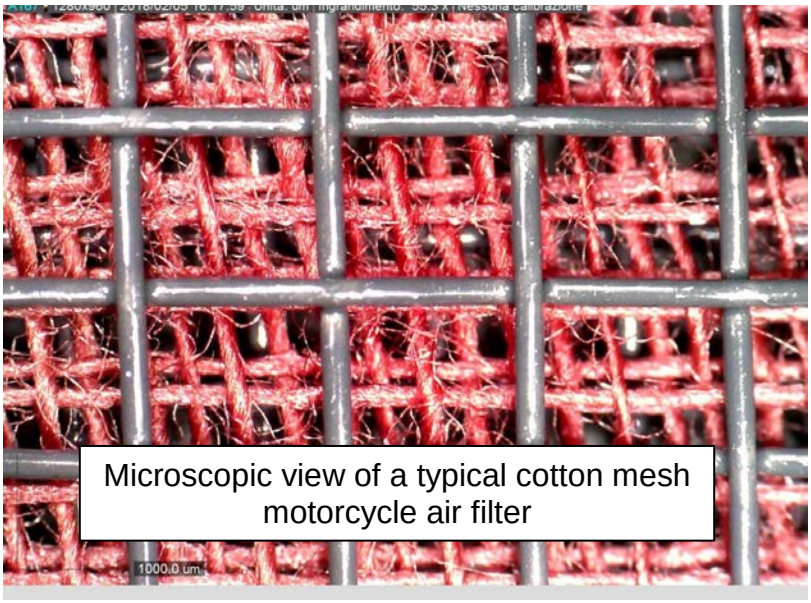
Microscopic view of a paper filter. It’s nothing more than pressed wood fiber, with random large holes here and there.

By way of explanation, all the following microscope pictures have the same magnification of 55x to allow the best perception on how they are built.

Paper filters are well known for being very good at particulate retention, it is, like all type of paper products, produced simply compressing down a mat of plant fibers therefore, it is not homogeneous.

As you can see, some areas are really dense, some others have holes. A good paper filter would achieve a flow of 870 l/(m²*s),and paper would filter around 40-45 microns.

The gym sock? Well, the market is redundant with different brands proposing the same Cotton based technology, warp and weft of cotton threads, here the thing gets interesting.



Microscopic view of a typical cotton mesh motorcycle air filter

This is a photo of a cotton air filter. Yes, you can see the holes between the threads, and yes, the holes are pretty big, holes as big as 400x700 microns, the overlapping of many strata, in this case a street application of three layers, will try to make sure not too many holes are simply passing-through channels. No need to say more, right?

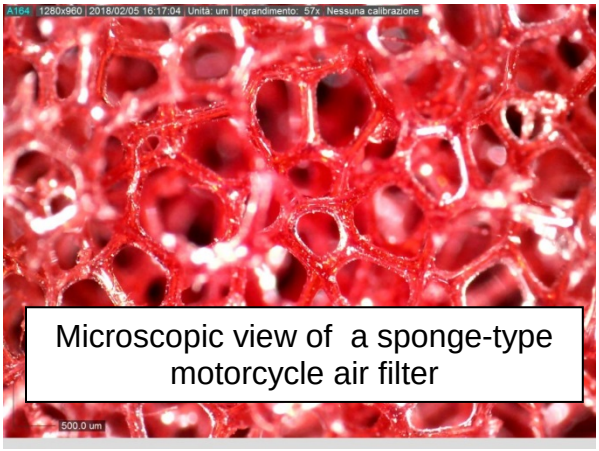
Oh, airflow, almost forgot, a good street three layer Cotton filter will allow around 11.800 l(m²*s), while a top race filter two layers 12.500 l(m²*s)

Now at right is a typical foam motorcycle filter, using the same technology as a washing sponge, for dish washing obviously :)

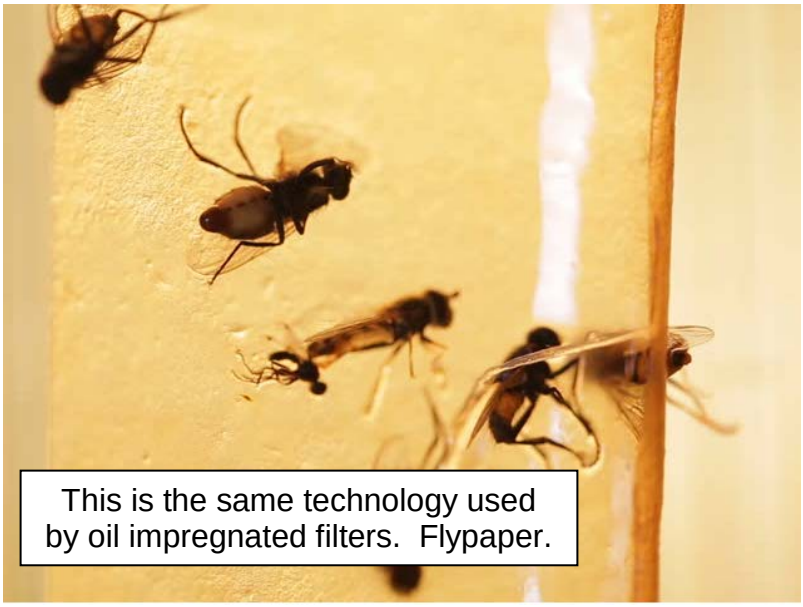
The situation is not any better, we still have big passages, as big as 450 microns in some cases, hopefully not aligned.

All this too allow a "scarce" 7.800 l(m²*s) air flow..

I am sure that you ALL know that filtration obtained with Cotton and Foam filters is due to the “Special Oil” used to impregnate both medias and trap particles. It uses the same technology as FLYPAPER, and this is a really big problem.



Microscopic view of a sponge-type motorcycle air filter

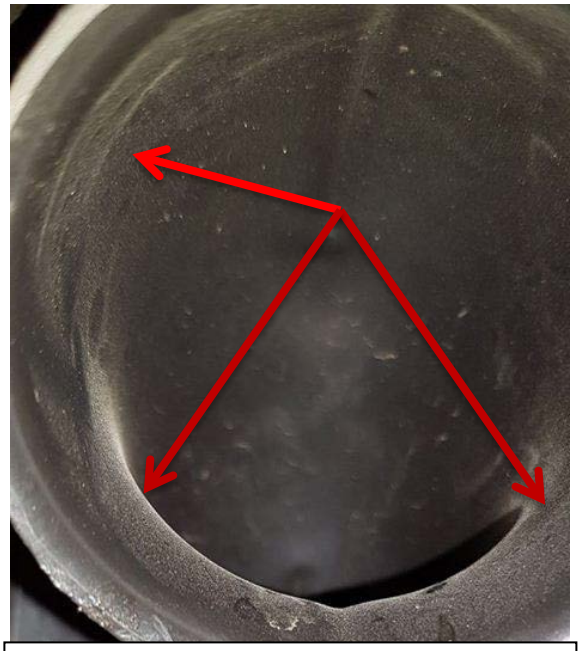


This is the same technology used by oil impregnated filters. Flypaper.

You see, a filter that uses an “oil trapping” technology allows "huge" particles to pass by the filter and go into your engine.

Until that oil has captured a large amount of debris, the passage holes remain large and the contaminants continue flowing to the carburetor or injectors. That’s not good for your engine.

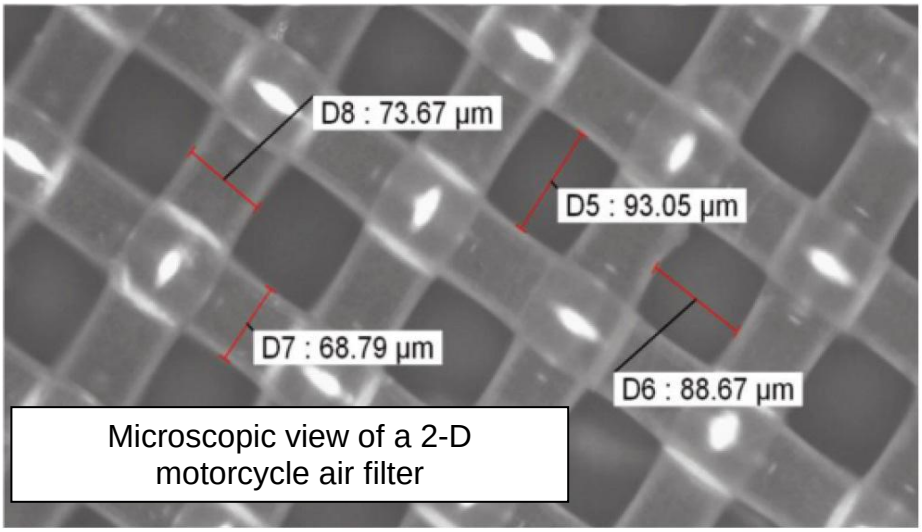
Here's an example of a filter taken from a BMW F800GS air box. It was ridden 2600 km on a dusty road in Italy. Before the photo was taken the bike had a full service and received a brand-name original product Cotton Sport/Street Filter.



You can see the dirt that passed thru the filter and stuck to the inside of the intake manifold. That manifold should be perfectly clean. If it's not that means the filter has failed.

Fine and middle sized dust particle went through the filter, went inside the AIRBOX, and down the intake manifold. **THIS IS NOT ACCEPTABLE**. Yes the filter passed plenty of air (really far too much) and at the same time it passed plenty of dust too. Would you want this in YOUR engine? You tell me.

Both Cotton and Foam based filters belong to the 3D layer filtration technology; let's talk about 2D filtration technology.



Microscopic view of a 2-D motorcycle air filter

Least but not last, my trusted tea leaves sieve concept, the only 2D technology example in the lot/market.

In this case magnification is only 10x, and yet you can see what kind of holes we are talking about

The grid in this case is smaller and more precise, you can see plenty of technology here, but still, the holes will let big particles

through, plus it is a flat surface, and dry technology.

Air flow here is something out of a magic book : 16.700 l(m²*s) !!!! amazing for sure, but 100 microns particles are really big chunks and stones that you're letting into your combustion chamber.

But, do you really need up to 18 times more air flow than the original air filter was designed to allow? 18 times?? really?? With the stoichiometric ratio for petrol 4 cycle engine is roughly 14:1..... really do you need that much air? No stratification, no building up of whirlpools disrupting the necessary "calm" pressurized air front and so on.

So, why is it like this? It seems clear that filtration protection is NOT the main focus of such products; instead they're focusing on "selling" the highest achievable "horsepower".

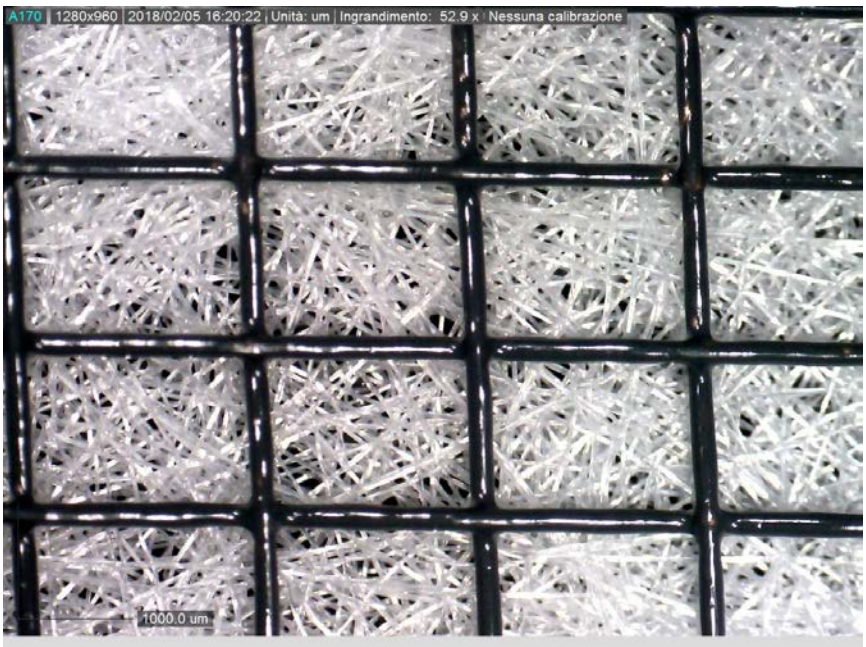
At Guglatech that's not our goal. We provide protection FIRST, and horsepower second. Even so, our filter still allows more air flow than paper filters so your engine still produces plenty of horsepower.

We started focusing on maximum protection for fuel systems, and it is obvious that we want to achieve the same in air filtration.

But how do you design a good filter? We wanted to achieve 4 big steps:

- BETTER PROTECTION than the OEM paper one, keeping in mind that any particles entering the engine were bad for it. Our filter does a better job than paper because there's no random holes.
- BETTER/BEST AIR FLOW allowed, better throttle responsiveness with best torque and top power combined.
- GREEN AND ECONOMICAL maintenance, no oil, no solvents, no pollution, simply fresh water, environment friendly.
- ETERNAL life, no need to pollute with further waste. And how do you achieve it? Simple, with more technology, research and only the best material available, always.

This, is what the Guglatech 3D matrix looks like:



You can see the holes are not so scarce like in the paper filter and they're way smaller than any of the other technology, roughly 35-40 microns. This dry technology achieves the best filtration. To clean the filter simply blow it with an air hose and wash with fresh water.

Air flow? We did our best, 2700 l(m²*s), three times better than paper, three times worse of the "last in class" of the other off-the shelf competitors, and yet our filter will allow a much better engine rev. keeping it

safe and clean.

This filter has been designed to take you around the world and back, to the longest tour of your life, for your commuting and/or simply rides, not for race on the track, we have designed a real tough media for real tough life.

We have not talked about BETA ratio..... this will come in the second part of the article.

Stay tuned