

HIGH EFFICIENCY AIR FILTER

TECHNICAL SPECIFICATION



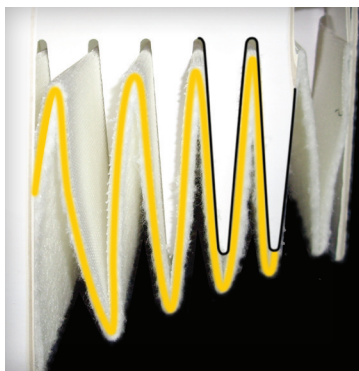
AIR POLLUTANTS

Air is simply: Oxygen (20.94%); Carbon dioxide (0.03%); Nitrogen and other inert gases (79.03%)... nothing else. Unfortunately we rarely breathe air this pure. We have no control over the quality the air is outside – there are lots of influencers that affect it – environmental (pollen, mould, dust) and industrial (vehicle emissions).

Breathable air particles are referred to as PM10 or particles below 10 micron – which is a measure of air pollution. Particles in our urban air show a bimodal distribution, with the most dominant particle being 0.4micron. This is the most difficult particle size to catch – and is the measure of a filters efficiency.

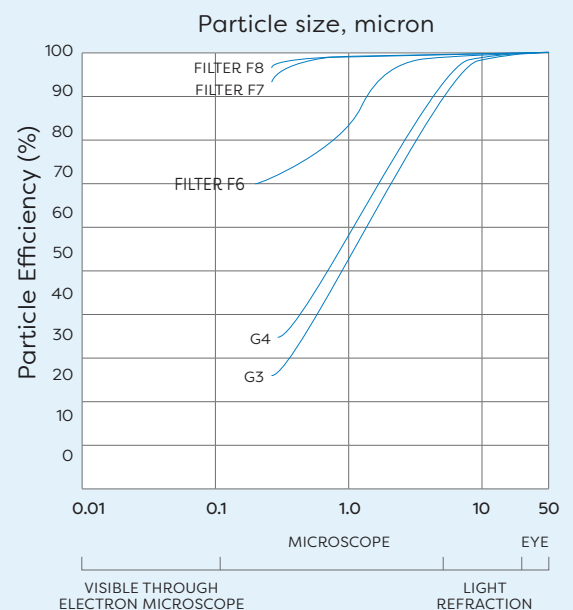
KEY FEATURES AND BENEFITS OF THE HRV FILTER

- Reduction of exposure to allergens, lung damaging dusts and toxic substances
- High efficiency – rated F8
- Electrostatic filter media – high initial efficiency
- Antimicrobial nanofibre layer
- High dust holding capacity
- Long life – 2 years
- Durable monofilament mesh – holds shape and strength of pleats
- Tight rigid seal designed specifically for the HRV system
- Deep pleat construction - large surface area

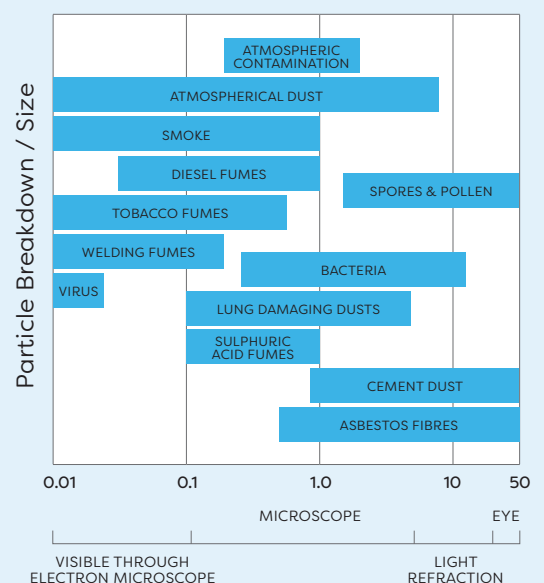


Cut through section of HRV Filter showing deep pleat for 8x Filter surface area

Filtration Effectiveness at 95% Efficiency



Lines represent filtration effectiveness at 95% Efficiency





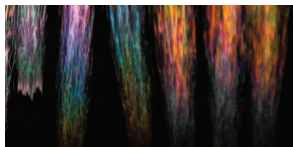
Key features and benefits of the HRV filter continued

- **Mechanical efficiency:** HRV's filter is independently tested by an accredited laboratory in Europe and is rated F8 according to Eurovent standards. This means it is 98% effective at capturing particles at 0.4microns in size.
- **Electrostatic filter media:** Synsafe Ultra is outstanding in the field of filtration. Years of research and development by Scandfilter (now Vokes Air) in Sweden has produced unique air filter media with an inherent electrostatic charge. Through the proprietary blending of different synthetic fibres, the highly electrostatic fibres attract dust as soon as it enters the air stream. The result is high initial efficiency - a key difference to most filters which build up their efficiency as dust particles build up on the media.
- **Graduated density:** The electrostatic media is then laid into a graduated density batt - meaning the larger particles are caught first, then smaller particles are captured progressively deeper into the media. The batt is then laminated to a nylon monofilament mesh, pleated and heat set. The net result is High initial efficiency, high dust holding capacity, and high strength.

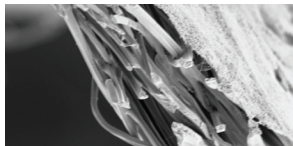
Our objective has always been to develop an air filter with a constant efficiency throughout its useful life, maintaining low pressure on the fan and a high dust holding capacity. The chart to the right demonstrates this combination.

SETA™ FILTRATION

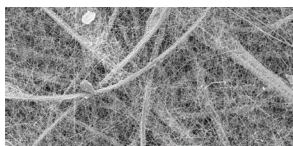
In addition to the Synsafe Ultra Technology, HRV is providing a world leading nanofibre technology to the filter. Developed by NanoLayr using a technique called electrospinning, an antimicrobial web of nanofibres is applied to the filter to capture allergens, bacteria and other small particles before they enter the filter media.



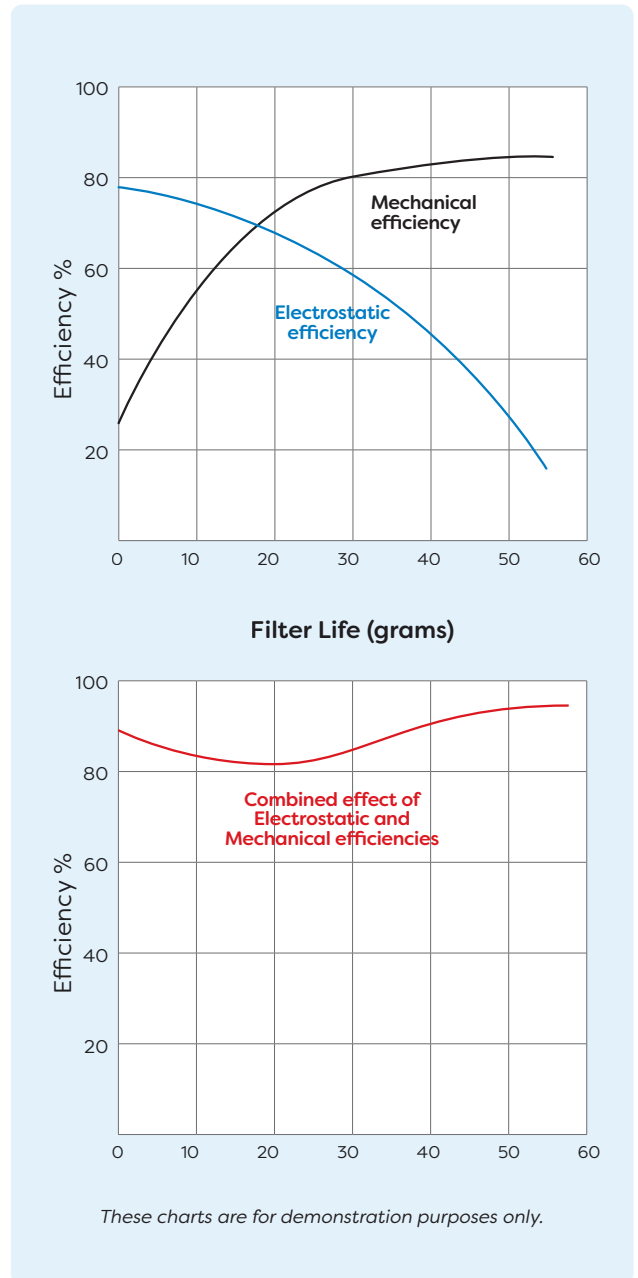
Light defraction through nano fibres during production.



Example of Seta fibres applied onto traditional filter media.



Nanofibre layer bridging the conventional fibres. Surface area increased. Pore sizes reduced (higher efficiency).



SAFE NZ and NanoLayr are proud to introduce NZ's leading filtration system.

HRV's 3 stages of air purification:

1. **Seta layer** - antimicrobial nano-layer, captures bacteria and fungi, uses natural additives to kill
2. **Electrostatic attraction** - captures the finest dust particles, high initial efficiency, don't wait months for your filter to be dirty to start working
3. **Graduated density** - the sieve capturing large particles to the finest lung-damaging kind

