viledon®

Blooming prospects

Ways to improve your painting results

Freudenberg
Filtration Technologies

Freudenberg

Reduce paint damage caused by dust particles – but how?

Excellent paint jobs are a reason to be happy. On the contrary, paint damage is aggravating. It costs time and money. Yet, you can significantly reduce the paint defects caused by airborne contaminants. By taking the right actions and using the proper filters, you can achieve many accomplishments.

In this small brochure we will give you a few tips on how you can protect the production quality, and we will introduce to you excellent filters.

We hope you enjoy much success and, naturally, only the best painting results.

When should the filter be replaced?

There is no general answer to this question as the useful lifetime of a filter varies depending on many factors. Examples of such factors are:

- Air pollution
- Arrestance performance of the prefilter
- Operating hours of the booth each week/month
- Power reserve of the fan, etc.
- Contamination on the clean air side

In the normal working environment, filters are commonly replaced simply during vacation periods (summer/winter) or during a system revision. A more sophisticated approach would be better. There are four simple rules to follow:

Four basic rules

1. In booths with low capacity utilization (fewer than five vehicles/day) one filter change a year is sufficient.

2. Ceiling filters of booths with high vehicle capacity (at least 15 vehicles/day) should be replaced twice a year.

3. It is best to replace prefilters before reaching a pressure loss of 200 – 250 Pa. If a manometer is not available, the filters should be changed every six months.

4. The floor filters need to be replaced when there is positive pressure in the booth. It is recommended to replace the filters once to twice a week.

Image (top left): Cars & Colours GmbH, Halle.

We recommend

Carry out regular controls of the differential pressure manometer. Temperature inversions (e. g., smog) or seasonal air pollution (e. g., pollen) can cause a more rapid increase.

The filters should be replaced according to the operating instructions from the booth manufacturer.

Perform maintenance work on weekends as the booth will be closed off for several hours.

Before installing the new filters, clean, vacuum, and wipe out the mounting fixture thoroughly.

Insert new cut pieces without creases.

When installing the new filters (prefilters and ceiling filters), make sure that the brand logo faces the downstream side. Check if everything fits tightly.

Wear proper work clothing when replacing filters: disposible coverall, safety glasses, gloves, and dust mask.

Do not replace the floor filters directly after a spray process. Replace the filters when the dust on the filter is dry. Doing so prevents the risk of inflammation.

Dispose of dirty filters properly.

What happens if there are paint defects?

Damage to paint can be expensive. Unfortunately, it cannot always be prevented. If you notice paint defects, you should eliminate the cause right away. The following control questions will help you find the cause of the problem:

- ☑ Were the ceiling filters installed without leaks?
- ☑ Does the ceiling filter have (mechanical) damage?
- ☑ Did prefilters and ceiling filters reach the final pressure drop?
- ☑ Have the filters been replaced regularly?
- ☑ Is dust penetration or particle release caused by using filters of lesser quality?
- ☑ Was the thorough pre-cleaning of the item to be painted done outside of the paint booth?
- ☑ Does the paint booth have the required positive pressure?
- ☑ Could the clothing worn by the staff be releasing dust?
- ☑ Do unauthorized persons have access to the systems?

Our tip

Proper and regular maintenance will minimize the amount of dust that affects the paint. This saves time, reduces the workload, and lowers costs.

Your advantages with Viledon® prefilters

- Progressively structured high-performance nonwoven fabric made from break-resistant, synthetic-organic polyester fibers
- High arrestance performance with low pressure losses
- Maximum dust holding capacity for a particularly long useful lifetime

→ Therefore, Viledon® prefilters ensure economic and process-reliable operation

Compact pocket filters G 35 S / F 45 S – short pocket filters

- High functional reliability thanks to leakproof welding of rigid filter pockets and foam in the PUR front frame.
- Protection of downstream components and ceiling filters: the rigid construction prevents the filter pockets from bending and consequently from dust penetration.
- The material components do not need to be separated for disposal: filters can be fully reduced to ashes.
- Low energy consumption, a long useful lifetime, and a high degree of cost-effectiveness.
- Maximum process reliability (bursting pressure > 3,000 Pa) through a mechanically stable design.

Compact pocket filters F 40 / F 50 – long pocket filters

Long pocket filters offer the same product advantages as short pocket filters and also the following:

- Outstanding filter performance in filter classes G 4 and M 5. The F 50 fine filter pocket filters of filter class M 5 are EUROVENT certified. This independent institution developed an international certification program for fine particle filters.

- The EUROVENT energy classification puts the F 50 pocket filters in energy class A. With this rating, these filters provide the most energy-efficient operation of the ventilation system.

- They are robust for long-term use and satisfy high requirements in resilience and cost-effectiveness.

energy efficiency
performance

Viledon® ceiling filters

- **Maximum dust holding capacity and useful lifetime** thanks to the progressive structure of the filter media; filters are constructed with decreasing fiber diameters towards the clean air side.

- **No fiber break** as only elastic, synthetic-organic fibers are used.

- The continuous, active-adhesive material ensures maximum dust binding capacity: this guarantees the **highest possible process reliability in matters of dust penetration, even with long useful lifetimes**.

- All Viledon® ceiling filters achieve **migration test class "S0"**.

- **Temperature-stable up to 100 °C, constant temperature without affecting adhesive properties**, e. g., in the drying mode in combination booths.

- Solvent-resistant and absolutely silicone-free filter material, which prevents **craters from being formed during painting**.

- Satisfying all technical hygiene requirements compliant with VDI 6022.

- Neutral type-tested filter media compliant with EN 779: All filters are delivered with **consistently high quality**. This is documented on the PA/560 G-10 and PA-5 micron filter mats through the **clean air-side printing of brand name, type designation, filter class, DIN mark of conformity, and model validation number**.

- With practically **100% arrestance of 5 µm particles**, PA-5 micron filter mats meet the highest demands for modern painting systems.

No. 1 Viledon® ceiling filters are the first choice around the world in the automotive industry

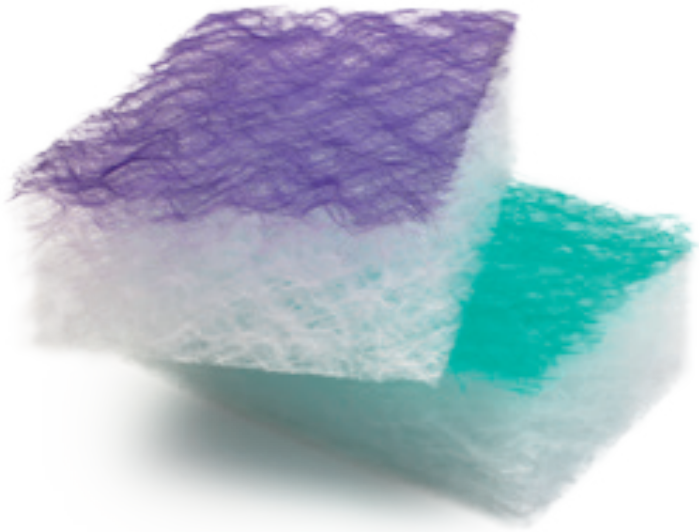
Viledon® paint mist arrestors PS 50 / PS 100

- High shape stability with the use of high-quality types of glass.
- Shape-elastic fiber glass medium with progressive structure, openly structured upstream side (green) and increasing fiber density towards the clean air side.
- Fire-proof according to DIN 4102 and temperature resistant up to 140 °C.

Non-flammable to DIN 4102

Viledon® paint mist arrestors PSH 75

- Exceptionally suited for the arrestance of water-based paints.
- The elastic and fine material structure prevents the surface from becoming clogged prematurely.
- Long useful lifetime due to increased paint storage capacity for hydro paints.
- Enhanced material rigidity thanks to special finish.



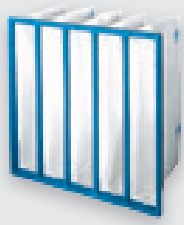
Viledon® Compact pocket filters as exhaust air filters

- Especially high paint storage capacity for long useful lifetimes in downstream exhaust air filtration.
- Progressively structured high-performance nonwoven fabric made from break-resistant, synthetic-organic polyester fibers.
- Rigid construction: no bending and no sticking together of filter pockets caused by drying of the filtered paint.
- Leakproof filter pockets foamed in plastic frames, preventing dust penetration while protecting exhaust air fans and heat recovery units.
- Mechanically stable design of Viledon® Compact pocket filters ensures maximum process reliability (bursting pressure > 3,000 Pa).
- The material components do not need to be separated for disposal; they can be completely reduced to ashes.

In exhaust air systems, Viledon® Compact pocket filters provide low pressure drops, long useful lifetimes, and, therefore, a high degree of cost-effectiveness.

The Viledon® filter concept for your paint booth
Prefilters. Ceiling filters. Paint mist arrestors.

Prefiltration

	Properties
 PSB/290 S	Filter cost savings with long useful lifetime
 P15/500 S	Filter cost savings through long useful lifetime and reusability
	Clean by washing or spraying off
 G35 S	Economical due to long useful lifetime
	Energy-saving through low filter resistance
 F45 S + F40	Economical due to long useful lifetime
	F 40: thanks to low pressure drop very energy-efficient
 F50	High clean air quality with particular cost-effectiveness
	Very energy-efficient with energy class A based on EUROVENT 4/21

	Filter class	Fire class	Features	Delivery form
	G4	F1 DIN 53438		Available in rectangular dimensions as rolls or cut pieces with maximum 20 × 2 m (length × width).
	G3	F1 DIN 53438		Available in rectangular dimensions as rolls or cut pieces with maximum 20 × 2 m (length × width).

	Filter class	Fire class	Features	Size	Front frame in mm	Overall depth in mm
	G3	F1 DIN 53438	energy efficiency performance	1/1	592/592	330
				5/6	492/592	330
				1/2	289/592	330

	Filter class	Fire class	Features	Size	Front frame in mm	Overall depth in mm	
						F45 S	F40
	G4	F1 DIN 53438	energy efficiency performance	1/1	592/592	330	650
				5/6	492/592	330	650
				1/2	289/592	330	650
				1/4	289/289	-	650

	Filter class	Fire class	Features	Size	Front frame in mm	Overall depth in mm
	M5	F1 DIN 53438	energy efficiency performance	1/1	592/592	650
				5/6	492/592	650
				1/2	289/592	650
				1/4	289/289	650

Ceiling filtration

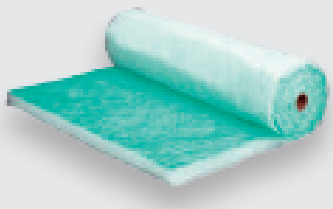
	Properties
PA/500–10	Arrestance >99.9% for particles >10 µm
	With temperature-resistant, active-adhesive finish
PA/560G–10	Arrestance >99.9% for particles >10 µm
	With temperature-resistant, active-adhesive finish
	Reliable installation through clean-air side scrim
PA–5 micron	Very high filtration efficiency with an arrestance of >99.9% for particles >5 µm
	With temperature-resistant, active-adhesive finish
	Reliable installation through clean-air side scrim

All Viledon® filters above are tested and classified according to EN 779; the fine particle filters (filter class M5 – F9) are EUROVENT certified. PA 560 G-10 and PA-5 micron are also impartially DIN type-tested.

All Viledon® filters on the left are tested and classified according to EN 779; the fine particle filters (filter class M5 – F9) are EUROVENT certified.

	Filter class	Fire class	Features	Delivery form
	M 5	F 1 DIN 53438	Viledon® S0 Migration test	Available in rectangular dimensions as rolls or cut pieces with maximum 20 × 2 m (length × width).
	M 5	F 1 DIN 53438	Viledon® S0 Migration test	Available in rectangular dimensions as rolls or cut pieces with maximum 20 × 2 m (length × width).
	M 6	F 1 DIN 53438	Viledon® S0 Migration test	Available in rectangular dimensions as rolls or cut pieces with maximum 20 × 2 m (length × width).

Floor filtration

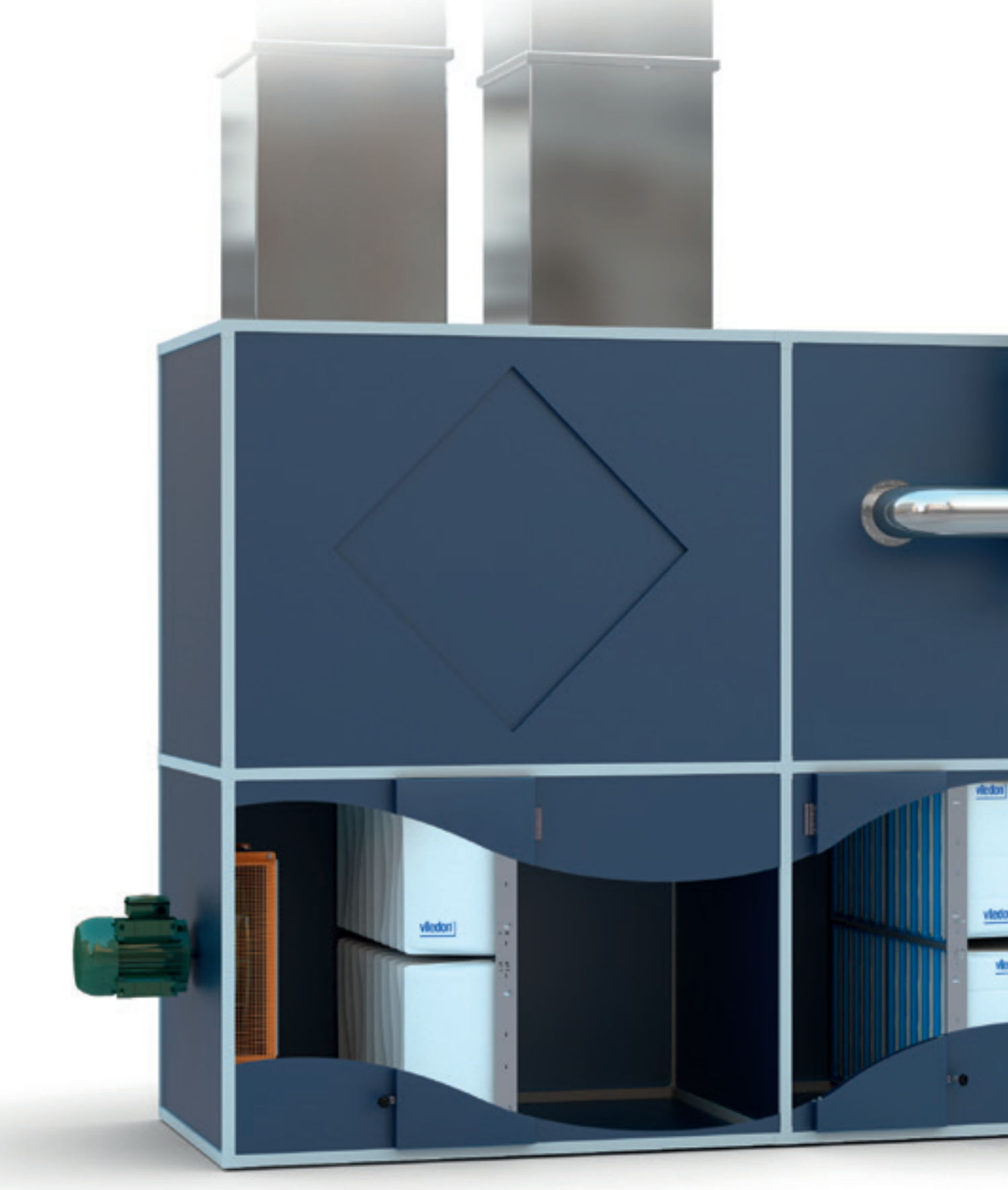


	Properties
PS 50 / PS 100*	For filtration of paint booth exhaust air
	High shape stability with the use of high-quality types of glass
	High arrestance performance over all paint mists; PS 50 > 93 %, PS 100 > 98 %
	Shape stability under loaded condition through low compressibility allows for utilization of entire material depth
	High paint storage capacity through special filter structure; PS 50 ≥ 2,500 g/m², PS 100 ≥ 3,900 g/m²
Paint Stop Hydro PSH 75	Exceptionally suited for the arrestance of water-based paints
	Increased paint storage capacity for hydro paints, creating a long useful lifetime
	Enhanced material rigidity thanks to special finish

**Custom dimensions / cut pieces on request*

	Filter class	Fire class	Features	Delivery form					
				Roll width /mm	PS 50				PS 100
					Roll length /m				
					20	25	50	91	20
		Non-flammable to DIN 4102		500	●	●	●	●	
				610				●	
				660				●	
				760				●	
				860				●	
				910				●	
				1,000	●	●	●	●	●
				1,250	●	●	●	●	●
				1,524	●	●	●	●	●
				2,000	●	●		●	●

		Non-flammable to DIN 4102		Cut pieces or rolls
				Cut pieces: rectangular
				Rolls: available starting at 10 m run length with a width of 300 – 3,000 mm



Example ventilation system of a paint booth with intake and exhaust air filters

Pay attention to energy consumption

Increasing energy costs and the necessity to reduce CO_2 emissions are raising awareness about the energy consumption of filter systems.

For your paint booth, select energy-efficient filters with a high dust holding capacity and an overall low and very slow increase in pressure drop over their useful lieftime.

Check: here is how to recognize energy-efficient filters

- ☑ Energy efficiency classes A+, A and B based on EUROVENT 4/21
- ☑ Low pressure drop trend
- ☑ Large filter surface areas for high dust-holding capacity
- ☑ Progressively structured filter medium for optimum depth filtration
- ☑ Aerodynamic filter structure for the best possible airflow, e. g., rigid pockets (for pocket filters), etc.

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