



viledon®

THE EDRIZZI SYSTEM

RELIABLE AND COST-EFFICIENT PAINT MIST ARRESTOR BOXES
FOR EFFICIENT DRY SEPARATION

IMPRINT

Owner and responsible for content
Freudenberg Filtration Technologies SE & Co. KG

Concept & Design
Freudenberg Filtration Technologies

Sturm Grafikdesign
(www.sturm-grafikdesign.de)

Text & Content
Freudenberg Filtration Technologies

azett kommunikation
(www.azett-kommunikation.com)

3D-Visualization
Aberjung Design Agency
(www.aberjung.com)

Photography
Martin Lugger
(www.martinlugger.com)

**ECONOMICAL, FLEXIBLE AND
EFFICIENT, HIGH-CLASS AND
ENVIRONMENT-FRIENDLY TOO.
NOT BECAUSE IT SIMPLY SOUNDS
GOOD, BUT ALSO BECAUSE IT IS SO.**

THE ORIGINAL PAINT MIST SEPARATOR SYSTEM SINCE 2003.

THE BEST IDEAS ARE THE SIMPLE ONES.

edrizzi® is a system for paint mist separation in the coatings sector that has been patented since 2003. The system is based on a handy box – produced from naturally growing raw material, corrugated cardboard. Flexible in handling and easy to upgrade, edrizzi® has a high absorption capacity and is as cost-effective in disposal, as in most cases the boxes can be disposed of in incineration plants.

A THE BOX AS THE BASIS

The master-stroke of the edrizzi® Vario system lies secretly in the inconspicuous boxes: The paint mist is guided by under-pressure in the complex system consisting of edges and openings in order to achieve maximum absorption. The potentiating effect of the absorption surface, the arrangement of the various guiding systems and utilisation of the centrifugal force facilitate the revolutionary absorption capacity of the system. Three different solutions support the characteristics of different surface materials for the absorption. Every area of application in the coatings industry is covered by this development. The processing of fire-retardant corrugated cardboard (Certification DIN4102, testing for non-flammability, construction material class B1) makes the edrizzi® Vario system safe and robust in application. The edrizzi® hydro product range also offers an ideal solution in the case of intensive loading with water-based paints and deposits of overspray with high moisture content.

B FROM THE BOX TO THE SYSTEM

In practice, every coating system is distinctive. In every application, there is a different coating situation depending on the material, plant size, application and air management. The degree of separation and absorption capacity of the edrizzi® system is determined by these factors and it can handle up to 97 % of the over-spray. After several years of experience with our system, the results are always different, but nonetheless, always more revolutionary!

The edrizzi® method is used in air circulation or exhaust air mode. The corrugated cardboard boxes assembled according to the principle of a building block system in any size to a complete separation surface. Galvanized metal sheets are used as the supporting construction. The use of a secondary filter stage is recommended for the degree of separation of the system. Various elements are available for secondary filtering that are conceived and designed depending on the area of application. After complete saturation, the paint mist separator and secondary filters can be replaced separately, quickly and flexibly. edrizzi® Vario boxes with dried paint can be disposed of cost-effectively in incineration plants.

C AREA OF APPLICATION

Regardless of the application method, the edrizzi® system can be used in any x-system: built horizontally and also vertically or combined horizontally and vertically. From the smallest manual spray booth up to automated coating lines. The edrizzi® technology can be retrofitted to existing systems easily and cost-effectively. With several years of application, the level of experience gained from various coating conditions and circumstances is high. Special solutions are developed and tested at the in-house technical centre.



The edrizzi® box in this coating booth of the automotive ancillary industry are installed horizontally. The paint mist separators can be used horizontally or vertically depending on the application.

THE BENEFITS OF THE EDRIZZI SYSTEM



ECONOMY

The changeover from wet to dry coating reduces the costs of painting by many times as a result of circulating air mode:

- ① Use of water for over-spray separation is dispensed with
- ② Expensive paint sludge disposal as special waste is omitted
- ③ Cost-intensive and time-intensive paint sludge extraction is not required
- ④ Use of chemicals (coagulation agents, de-foaming agents and bactericides, etc.) is dispensed with
- ⑤ Use of chemicals (coagulation agents, de-foaming agents and bactericides, etc.) is dispensed with
- ⑥ Maintenance costs are avoided without pump equipment
- ⑦ Costs of cleaning the plant are reduced
- ⑧ Economical supply and storage by disassembled boxes



EFFICIENCY

Absorption capacity up to 100 kg/m² and more depending on material in use, degree of separation up to 97 % with proper application and by Freudenberg Filtration Technologies recommended secondary filtering.



SUSTAINABILITY

Low-cost disposal of the dried paint (e.g. in the incineration plant), with no chemicals required.



ERGONOMIC

The noise level in the coating zone is reduced to a value between 15 and 20 dB; no odors as a result of wet extraction.



FLEXIBILITY

Easy conversion of existing systems; can be used for all surface materials; the system can be expanded and extended.

Every surface treatment method is different. There are innumerable areas of application, which the Freudenberg Filtration Technologies Team considers a challenge for system solutions and developments.



MICROBIOLOGY

No growth of germs and molds.

PRODUCT OVERVIEW

VARIO

The three types of Vario paint mist separators for different types of surface materials form the basis of the edrizzi® system. These simple cardboard boxes with their complex interiors absorb a majority of the over-spray.

Further information from page 12 onwards

SLIDE-IN ELEMENTS

Slide-in elements are used as supporting construction for the edrizzi® paint mist separators and certain secondary filter versions and are built from galvanized steel sheet using the simple building block principle.

Further information from page 20 onwards

SECONDARY FILTER

Secondary filtration supplements the paint mist separation and is designed and recommended depending on the specific application. The Viledon® Service Team offers solutions for various surface materials and types of application.

Further information from page 22 onwards

SYSTEM SOLUTIONS

Application-specific system solutions are the high-end versions of the edrizzi® system and the result of several years of development in the edrizzi® technical center as well as many systems running in various industries.

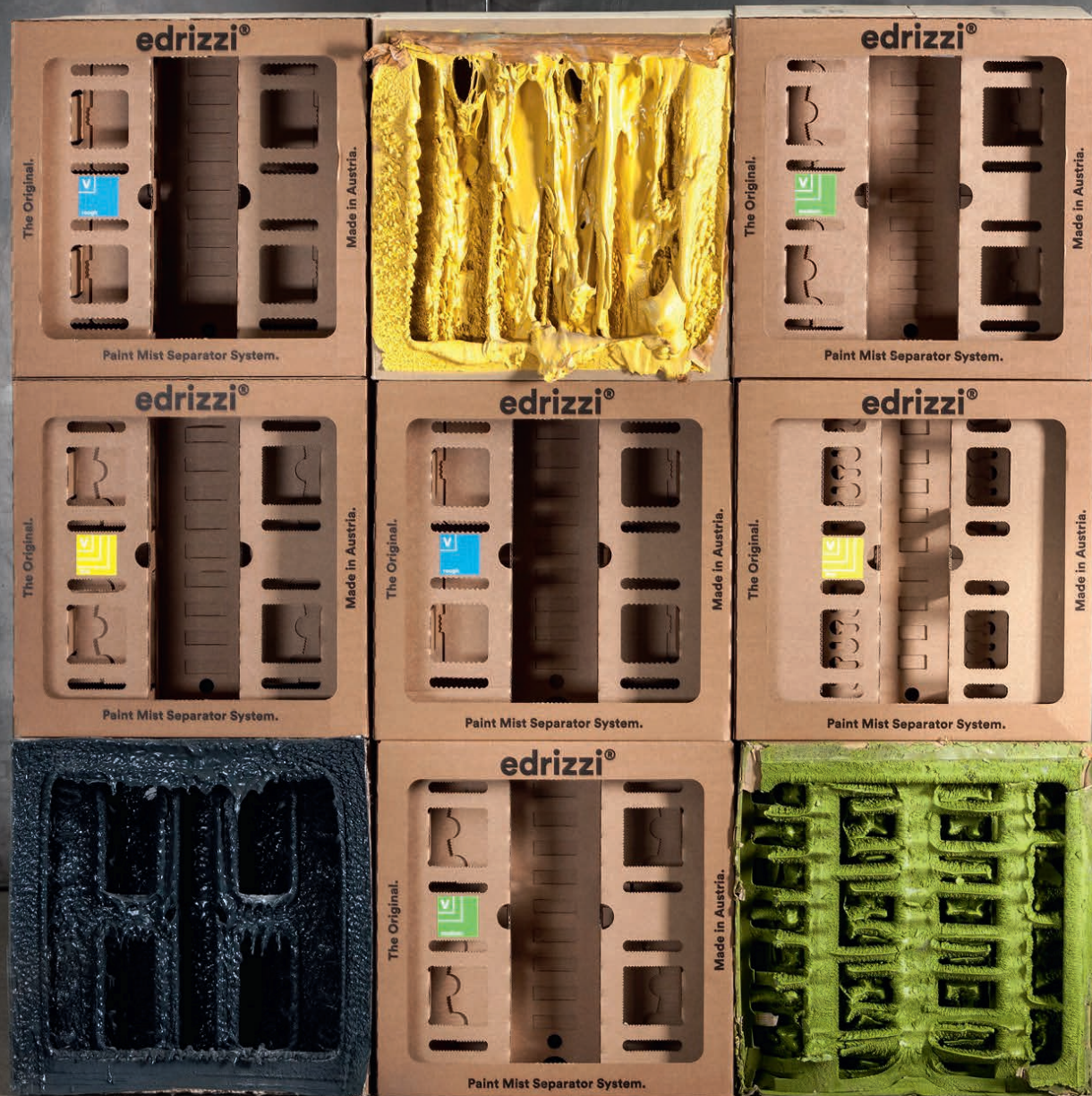
Further information from page 30 onwards

VARIO

THE WAY TO THE VARIO BOXES

Findings of research and experience have yielded that – depending on the composition of the material being treated – overspray gets deposited in different areas of the paint mist separator. The values from these findings formed the key to the design of the various guiding systems of the types, fine, medium and rough. For better understanding of the paint mist separation, it must be added as clarification that not all areas of the box are meant to get saturated. The main part of the paint dust is collected in the one third in the front, while the guiding systems deep down are used to achieve as high a degree of separation as possible and should not get completely saturated.

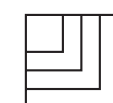
The three types of edrizzi® Vario are the result of several years of development and intensive exchange with the paints industry and supersede the edrizzi® Automotive system used so far. The processing of fire-retardant corrugated cardboard makes the edrizzi® Vario system safe and robust in application. The three solutions support the characteristics of different types of coating and adhesion for the absorption. In addition, the use of the edrizzi® hydro product variants is recommended for intensive loading with water-based paints and for deposits of overspray with high moisture content. Every area of application of the paint industry is covered by this development.



Comparison of saturated and unsaturated edrizzi® paint mist separators.

Cakes of paint on the front side, however, do not mean saturation by a long shot, since the majority of the absorption takes place in the first one third of the boxes and the depths are used to achieve the maximum degree of separation.

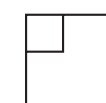
For simple checking, a sheet of paper is held at the inlet opening while the system is running. If the sheet of paper is held in place by the extraction, it means that the boxes are still functional.



Vario fine



Vario medium



Vario coarse

VARIO FINE

The edrizzi® Vario fine is used wherever the proven edrizzi® Vario medium reaches its limits with respect to the degree of separation. Examples of application include high-speed rotating bells, very finely atomised solvent-based paints, quick-drying systems and nano paints.



Technical specifications

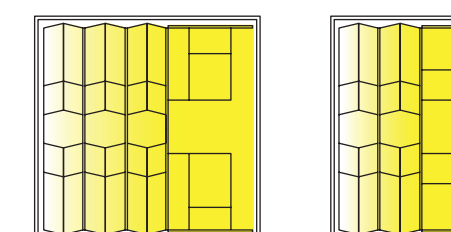
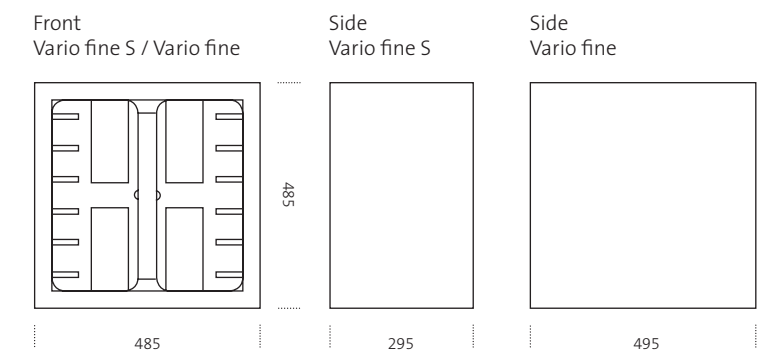


Dimensions (mm)

Schematic and saturation

	Vario fine	Vario fine S / Vario fine
	Filter class	Paint mist arrestor
	Paint storage capacity	Vario fine S: up to 15 kg* Vario fine: up to 25 kg*
	Degree of separation	up to 97 %
	Nominal air flow	500 – 1250 m³/h
	Initial pressure drop at 500 m³/h	Vario fine S: 55 Pa Vario fine: 60 Pa
	Thermal stability	up to 80°C
	Moisture resistance Vario fine	Recommended storage conditions: Temperature 15-25°C Rel. humidity 45-70 %
	Vario fine hydro	Wet-proofed for direct application of rinsing liquid and water-based base coats.
	Weight empty	Vario fine S: ≈ 1.400 g Vario fine: ≈ 2.200 g
	Vario fine reaction to fire	Certification DIN4102 testing for non-flammability, construction material class B1: fire-retardant

*The maximum absorption capacity depends on the paint type, application technology and separator arrangement.



Majority of saturation happens in the first third of the Vario paint mist separators.

VARIO MEDIUM

The edrizzi® Vario medium offers the solution for the majority of all surface materials and has been tested and used successfully since 2003 in all industries.



Technical specifications

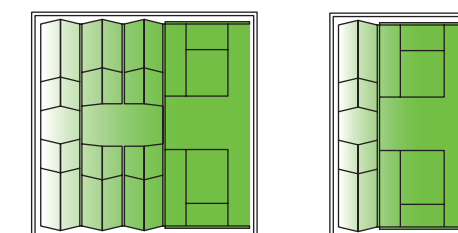
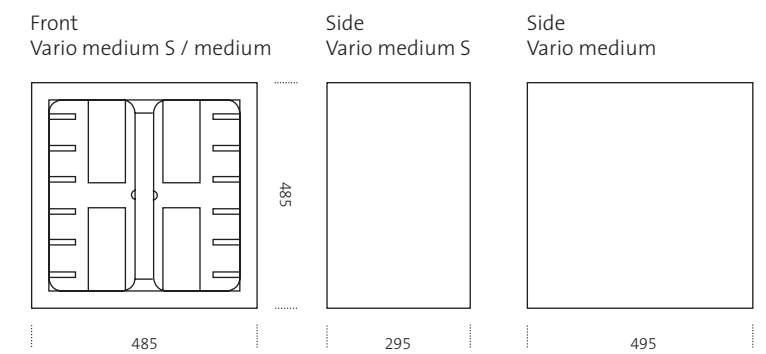


Dimensions (mm)

Schematic and saturation

	Vario medium	Vario medium S / Vario medium
	Filter class	Paint mist arrestor
	Paint storage capacity	Vario medium S: up to 15 kg* Vario medium: up to 25 kg*
	Degree of separation	up to 95 %
	Nominal air flow	500 – 1250 m³/h
	Initial pressure drop at 500 m³/h	Vario medium S: 42 Pa Vario medium: 44 Pa
	Thermal stability	up to 80°C
	Moisture resistance Vario medium	Recommended storage conditions: Temperature 15-25°C Rel. humidity 45-70 %
	Vario medium hydro	Wet-proofed for direct application of rinsing liquid and water-based base coats.
	Weight empty	Vario medium S: ≈ 800 g Vario medium: ≈ 1.600 g
	Vario medium reaction to fire	Certification DIN4102 testing for non-flammability, construction material class B1: fire-retardant

*The maximum absorption capacity depends on the paint type, application technology and separator arrangement.



Majority of saturation happens in the first third of the Vario paint mist separators.

VARIO COARSE

The edrizzi® Vario coarse is the solution for those applications in which the Vario medium does not achieve the service life as a result of fast displacement of the inlet openings, i. e. cakes of paint form on the front side. This happens with surface materials that tend to foam up.



Technical specifications

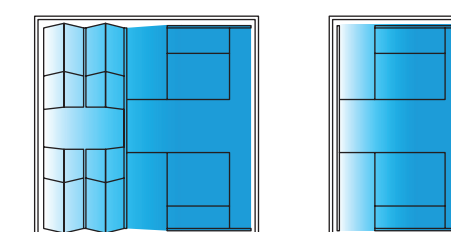
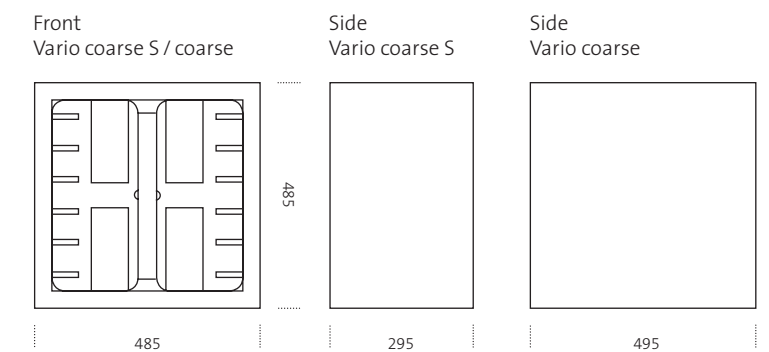


Dimensions (mm)

Schematic and saturation

	Vario coarse	Vario coarse S / coarse
	Filter class	Paint mist arrestor
	Paint storage capacity	Vario coarse S: up to 15 kg* Vario coarse: up to 25 kg*
	Degree of separation	up to 90 %
	Nominal air flow	500 – 1250 m³/h
	Initial pressure drop at 500 m³/h	Vario coarse S: 11 Pa Vario coarse: 22 Pa
	Thermal stability	up to 80°C
	Moisture resistance Vario coarse	Recommended storage conditions: Temperature 15-25°C Rel. humidity 45-70 %
	Vario coarse hydro	Wet-proofed for direct application of rinsing liquid and water-based base coats.
	Weight empty	Vario coarse S: ≈ 1.100 g Vario coarse: ≈ 1.900 g
	Vario coarse reaction to fire	Certification DIN4102 testing for non-flammability, construction material class B1: fire-retardant

*The maximum absorption capacity depends on the paint type, application technology and separator arrangement.



Majority of saturation happens in the first third of the Vario paint mist separators.

SLIDE-IN ELEMENTS

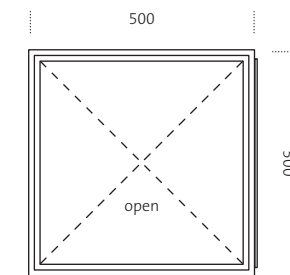
The edrizzi® slide-in elements E 300 and E 500 are used as supporting construction for the edrizzi® Vario paint mist separators Vario S and Vario and certain applications of secondary filtration. The edrizzi® boxes can be combined easily and quickly into a separator wall of any size desired – according to the increments in size – with these elements. The slide-in elements are made of galvanized steel sheet or they are also made of stainless steel on request. The slide-in elements with the edrizzi® Vario can be used in painting booths with horizontal or vertical ventilation or a combination of both. Similarly, they may also be installed at a slant or in the underfloor region. It is possible to retrofit them in existing systems.



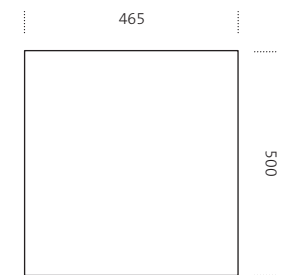
Assembly of slide-in elements

Dimensions (mm)

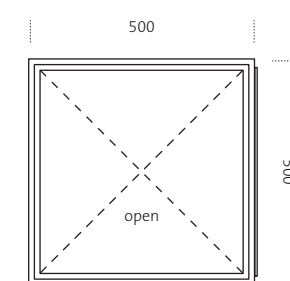
Front, E 500



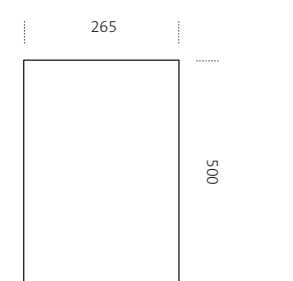
Side, E 500



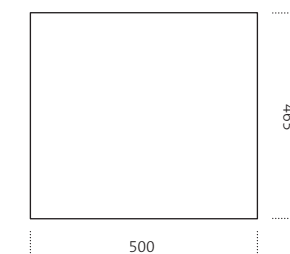
Front, E 300



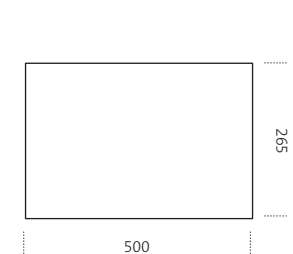
Side, E 300



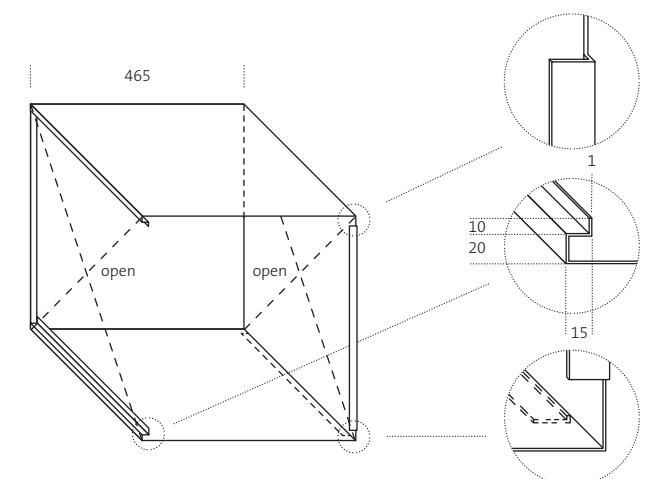
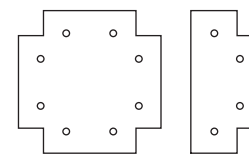
Above, E 500



Above, E 300



Installation of junction plate (full/half)



Note

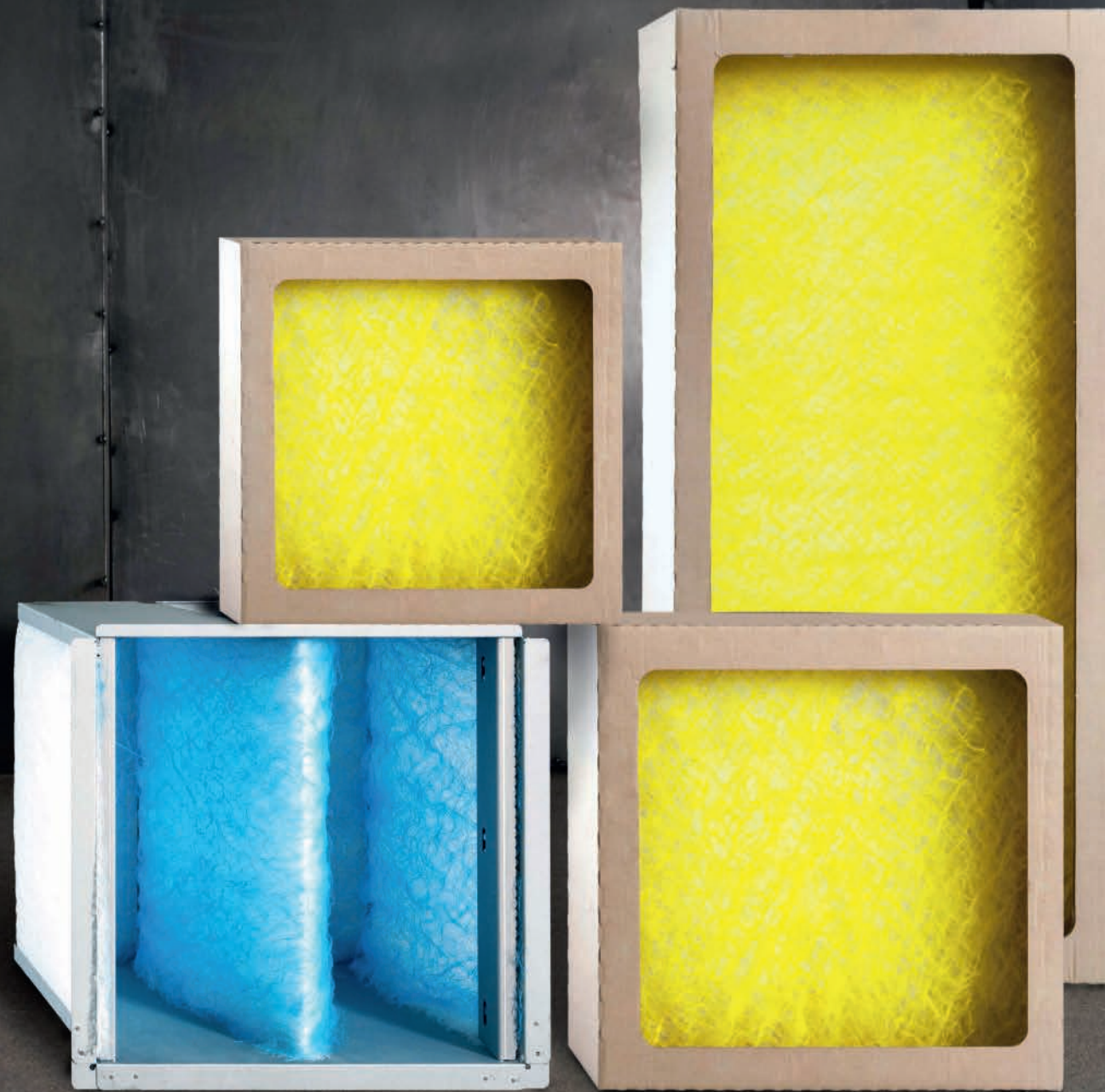
	Dimensional tolerance	+0mm/-1mm
	Material thickness	1 mm
	Material E 300 & E 500	galvanized steel



The edrizzi® boxes can be combined easily and quickly into a separator wall of any size desired – according to the increments in size – with these elements.

SECONDARY FILTER

Secondary filtration rounds up the edrizzi® system and is designed depending on the specific application. Secondary filtration is used for separating the fine dust from the exhaust air. Depending on the specific customer requirements and building conditions, edrizzi® post-filter elements can be used with Paint Stop filter mats or other filter elements, such as Viledon® pocket filters and synthetic filter mats. The Viledon® service team precisely tailors the system solution to the relevant requirements – enabling customers to save money.



EDRIZZI SECONDARY FILTER ELEMENTS

CUBE01

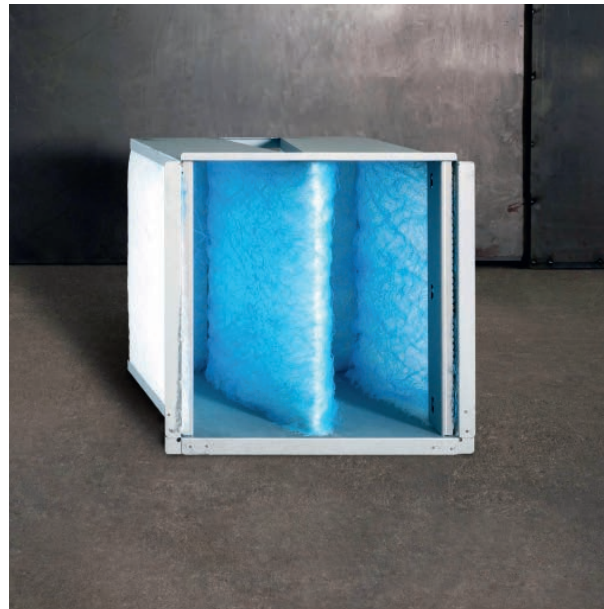


CARTON FRAMED SECONDARY FILTER ELEMENT

The filter area of CUBE01 is 1180 x 420 mm and can be equipped with any kind of filter mat. CUBE01 possesses an air circulation area of 400 mm deep in one chamber.

The filter box made of corrugated paper is fixed within a sheet steel frame on the slide-in element. The filter change can be executed from the back side or front side, depending on the two constructions available. Due to its light weight CUBE01 is easy in handling – an advantage during filter change in high and inaccessible locations of the spray booth. CUBE01 and its appropriate slide-in frame is delivered unassembled, flat and cost saving.

NFE02



METAL FRAMED, REUSABLE SECONDARY FILTER ELEMENT

NFE02 provides the secondary filter solution for systems where the installation of secondary filtering is possible only from the front. The supporting frames of the edrizzi® secondary filter elements are made of galvanized steel sheet. A filter mat is fixed in this frame.

The secondary filter elements are placed through the front opening of the edrizzi® slide-in elements E 300 or E 500. After saturation, the secondary filter element can be removed, fitted with a new filter mat and reinstalled.

NFEWP01



CARTON FRAMED SECONDARY FILTER ELEMENT (FRONT-INSTALLED)

NFEWP01 is the secondary filter solution for systems where the installation of secondary filtering is possible only from the front. The absorption box of the edrizzi® secondary filter element is made of fire-retardant corrugated cardboard. It can be used more often if the contamination is not too high. A retention clip must be mounted on the slide-in element once to use the secondary filter element.

The edrizzi® secondary filter elements are placed through the front opening of the edrizzi® slide-in elements E 300 or E 500.

NFEWP02, NFEWP03



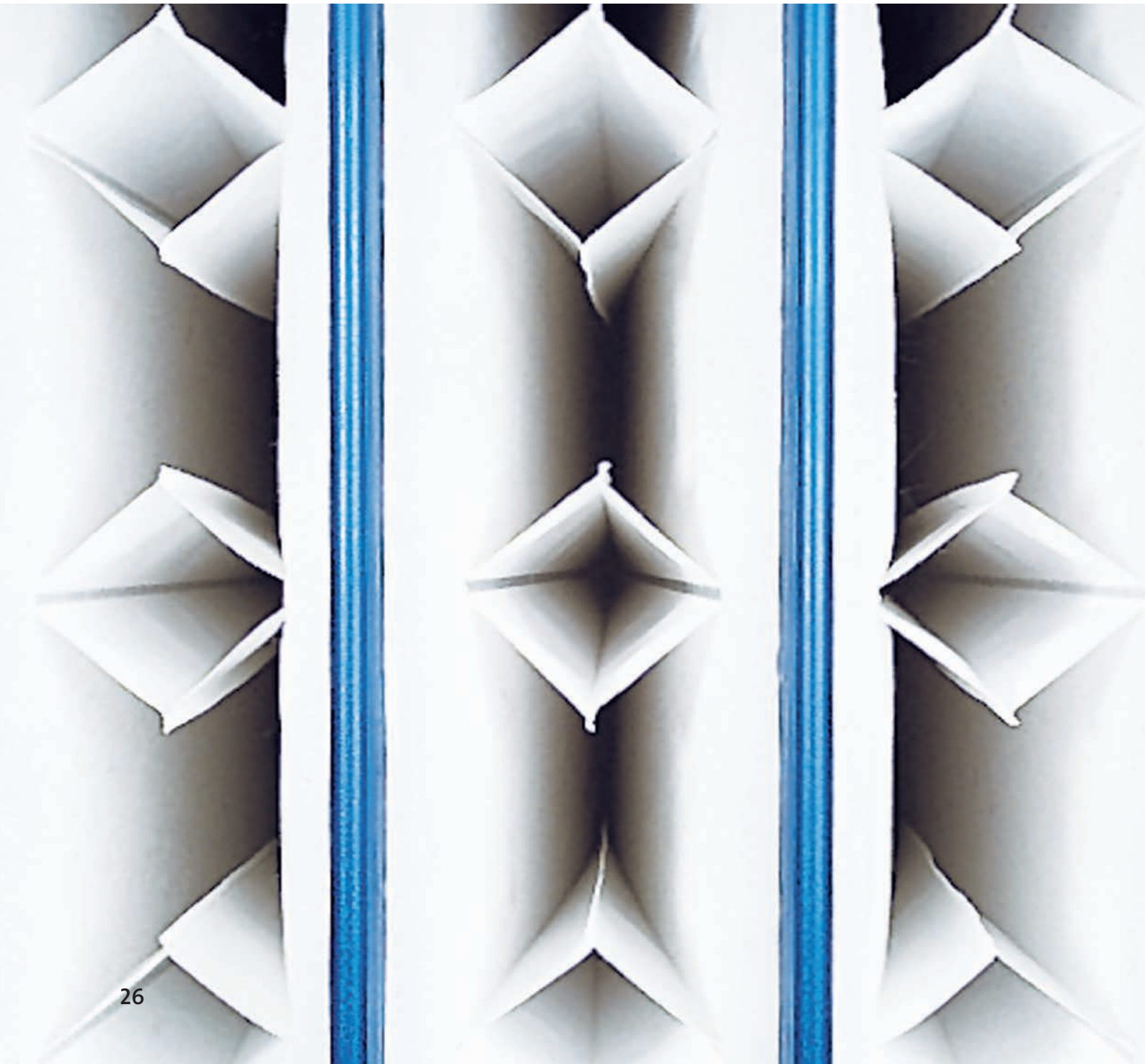
CARTON FRAMED SECONDARY FILTER (BACK-INSTALLED)

The filter can be installed on the side or at the back. The advantage of this system is replacement independent of the edrizzi® Vario boxes.

The absorption box of the secondary filter element, NFEWP02 or NFEWP03 is manufactured from fire-retardant corrugated cardboard and can be used more often with less fine dust.

The edrizzi® secondary filter elements NFEWP02 and NFEWP03 are introduced through an opening on the side – generally through side doors over the U-type slide-in rails. After saturation, these secondary filter versions can be removed without disassembling the edrizzi® Vario paint mist separator and can be reinstalled with a new filter mat.

VILEDON SECONDARY FILTER SYSTEMS



POCKET FILTER COMPACT G 35 – THE DUST-HOLDING MIRACLE

G 35 series compact pocket filters achieve a long service life thanks to their high separation efficiency and low pressure difference. These filters surpass the performance of glass-fiber mats. At the same time, with their high dust-holding capacity and flat pressure difference curve, they reduce both energy costs and CO₂ emissions. G 35 series pocket filters are glass-fiber-free, corrosion-free and microbiologically inert. They also meet all the criteria of the VDI guideline 6022 "Hygiene requirements for HVAC systems and devices".



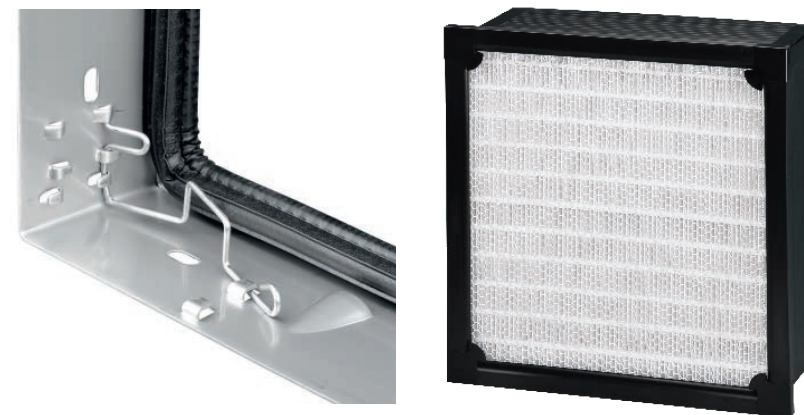
Detailed information about the Compact pocket filter variations can be found online at www.feudenberg-filter.com.

VILEDON RECIRCULATION FILTER SYSTEMS



MAXIPLSAT CASSETTE FILTER – SAFE AND SECURE

MaxiPleat cassette filters offer maximum safety for the supply, exhaust and recirculated air filtration of high-performance air-conditioning systems. The filter media used are high-strength micro-glass-fiber papers with a special thermoplastic binder system and a moisture-repellent coating. The patented thermal embossing process results in the optimum V-shaped fold geometry that ensures the full use and uniform dust coverage of the filter surface and homogeneous through-flow with low average pressure difference. This in turns enables a long service life with economical and safe operation.



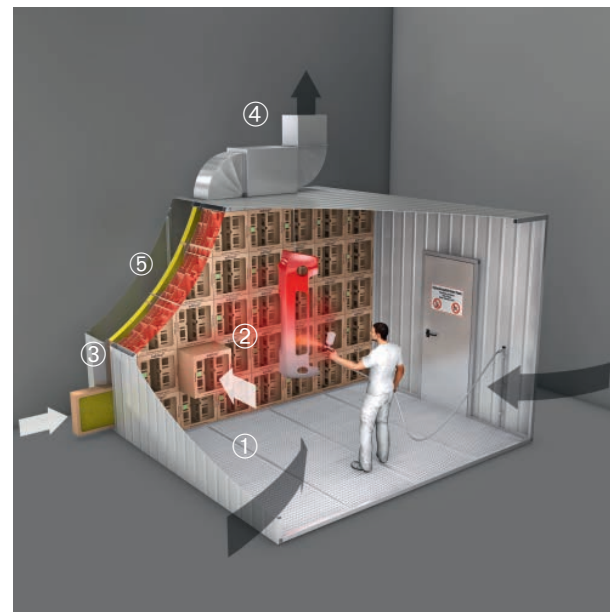
Detailed information about the MaxiPleat cassette filter variations can be found online at www.feudenberg-filter.com.

SYSTEM SOLUTIONS

We consider application-specific system solutions as a challenge and advanced development. Potential solutions in surface treatment are many, since, in practice, methods and processes are rarely comparable. For every application, there is a new coating situation depending on the material, plant size, application and air management.

EDRIZZI MODULAR SPRAY BOOTH

For ease of retrofitting existing systems and also for new systems, edrizzi® recommends the modular spray booth, one with all the features of the edrizzi® systems – flexible in size, ergonomic, economical and with long service life.



A sheet metal body with exhaust air ventilation and an edrizzi® Vario wall with the appropriate type form the basis of the edrizzi® modular spray booth

- ① Ergonomic area of application with reduced odor and noise
- ② edrizzi® separation wall with the appropriate Vario type
- ③ Secondary filtration zone with side access to replace the secondary filter independently
- ④ Exhaust air fan and piping
- ⑤ Sheet metal body

EDRIZZI IN THE UNDERFLOOR REGION FOR INDUSTRIAL APPLICATIONS

This separation solution for large industrial plants can be retrofitted and can also be incorporated in new plants.

New plants

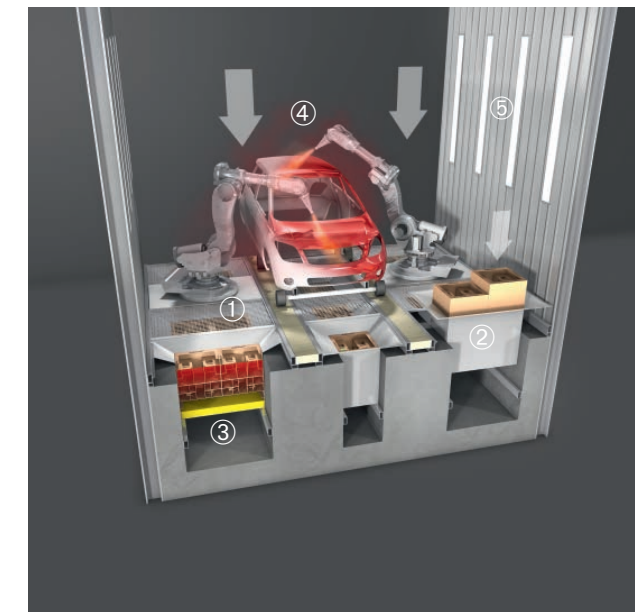
For new plants, the paint mist separators should be installed vertically below the gratings. This enables access to the edrizzi® boxes independent of the painting zone and without removing the grating.



- ① Booth enclosure
- ② Painting line
- ③ Underfloor separation zone with vertical edrizzi® wall
- ④ Secondary filtration zone (can be installed alternatively in any area of the exhaust air sector)
- ⑤ Sheet metal body
- ⑥ Exhaust air piping

RETROFITTING OF EXISTING FACILITIES

For floor extraction, the edrizzi® system can be installed horizontally or vertically just below the gratings of the painting area. The edrizzi® boxes are lowered in sheet metal inserts below the gratings. These inserts are produced in all sizes as special customized units. For those kind of applications the very high service life of edrizzi® systems is of special importance, since with heavy-duty gratings the rare replacement of the paint mist separators enhances the economy of the plant by many times.



- ① Heavy-duty gratings
- ② The sheet metal trays are customized products and contain the edrizzi® boxes
- ③ Secondary filter zone (can be installed alternatively in any area of the exhaust air sector)
- ④ Painting area
- ⑤ Booth enclosure

Freudenberg Filtration Technologies SE & Co. KG
69465 Weinheim/Germany
Phone +49 (0) 6201 80-6264 | Fax +49 (0) 6201 88-6299
viledon@freudenberg-filter.com | www.freudenberg-filter.com

