VEPAL IMPIANTI

DEDUSTING AND INDUSTRIAL FUMES CLEANING

www.vepalimpianti.com/en

ABOUT OUR COMPANY

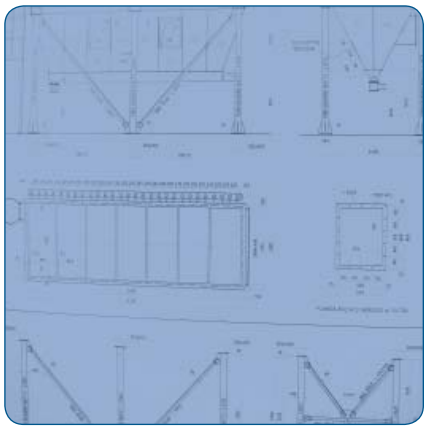
Vepal Impianti, as firm of design, production and installation of air anti-pollution systems, was founded in 1979 by Dr. Eng. Vincenzo Edoardo Palermo, who had already developed a considerable work experience in this field.

During all these years our path has been excellent, by solving all relating problems in the most important industrial fields both in Italy and abroad, with very positive results.

Our natural predisposition towards the search of advanced technology solutions allows us to have a complete and innovating range of dry dust collectors and wet scrubbers.

By these filters and an aimed study, we are able to face and solve any problem related to the scrubbing of all sorts of atmospheric pollutant, in the best way, so that the natural air quality is preserved in order to safeguard the life and protect the environment where the human being lives.

At conclusion of this short presentation, we'd like to highlight our leader position in the cleaning of the fumes coming from bitumen processing and bituminous products manufacturing.



DESIGN

PRODUCTION

INSTALLATION

WORLDWIDE PRESENCE

Our numerous references, in the most important industrial sectors, are located in almost all the regions of Italy and in many foreign Countries, which are in alphabetical order the following:

- ALGERIA
- BELARUS
- BELGIUM
- EGYPT
- FRANCE
- GREECE
- HOLLAND
- ISRAEL
- JAPAN
- KUWAIT
- POLAND
- PORTUGAL
- ROMANIA
- RUSSIA
- S. ARABIA
- SWITZERLAND
- TURKEY
- U. A. EMIRATES
- UKRAINE

INDUSTRIAL FIELDS

The industrial fields, where we can provide our solutions, are the following:

- **Bitumen processing and bituminous product manufacturing**
- **Refineries**
- **Chemistry**
- **Foundries**
- **Metallurgy**
- **Tannery**
- **Incineration**
- **Foodstuffs**
- **Galvanizing**
- **Ceramics**
- **Glass production**

WET SCRUBBERS

MULTISTAGE WET SCRUBBERS

Among our wet scrubbers, the special solution made up of the Venturi Scrubber/Washing Tower combination, series VNC/T and VNR/T, is our real workhorse, because of the many and various applications, built with high efficiency results in dedusting and cleaning fumes generated by the most important industrial processes.
The Venturi, which can be with fixed or variable throat, and at low, medium or high energy, is mainly aimed to collect the powdered pollutants, while the washing tower, filling static type, applies a greater collecting action against gaseous pollutants.

MAX AIR FLOW RATE TREATED: 250,000 m3/h

APPLICATIONS: Bitumen working - Refineries - Foundries - Chemistry - Ceramics - Galvanizing
Incinerating - Marble - Deodorization

- **Fume-cleaning system from bituminous membranes production**
- **Wet scrubber VNR/T type**
- **Fumes flow rate 120,000 m3/h**

- **Fume-cleaning system from bituminous tiles production**
- **Wet scrubber VNR/2T type**
- **Fumes flow rate 60,000 m3/h**

- **Fume-cleaning system from bituminous membranes production**
- **Wet scrubber VNR/T type**
- **Fumes flow rate 65,000 m3/h**

- **Fume-cleaning system for HCl and SO2 vapors**
- **Wet scrubber VNC/T type**
- **Fumes flow rate 4,000 m3/h**

- **Air cleaning system from marble calibrators**
- **Wet scrubber VNR/T type**
- **Airflow rate 30,000 m3/h**

WET SCRUBBERS

VENTURI SCRUBBERS

These classic wet scrubbers, series VNC-VNCS-VNRS, can be with fixed or variable throat and moreover, in relation to pressure losses, we distinguish Venturi at low, medium or high energy.
The system with special variable throat offers the huge advantage of being able to adapt the apparatus operation to any possible change of the airflow, while the pressure losses affect considerably the efficiency of collection for any type of powdered pollutant, whose granulometric characteristics determine the appropriate operation conditions.
Finally we'd like to highlight our special Venturi VNC type, where the washing liquid circulation takes place without the aid of any pump, but just by a flow liquid suspension from the sucked air.

MAX AIR FLOW RATE TREATED: Venturi VNCS e VNRS: 250,000 m3/h - Venturi VNC: 120,000 m3/h

APPLICATIONS: Foundries - Chemistry - Food - Ceramics - Galvanizing - Incinerating
Tanneries - Marble

- **Fume-cleaning system from incinerator RSU**
- **Wet scrubber VNCS type**
- **Fumes flow rate 30,000 m3/h**

- Fume-cleaning system from secondary aluminum production
- Wet scrubber VNCS type
- Fumes flow rate 20,000 m3/h

- Fume-cleaning system from hot galvanizing
- Wet scrubber VNC type
- Fumes flow rate 25,000 m3/h

- Air cleaning system from leathers finishing
- Wet scrubber VNC type
- Air flow rate 25,000 m3/h

- Air cleaning systems from leathers finishing
- Wet scrubbers VNC type
- Air flow rate 15,000 m3/h/each

WET SCRUBBERS

WASHING TOWERS

The filling static washing towers are used mostly to kill vapors/gas by leveraging the physical phenomena of condensation and by the absorption from a liquid, which is just water in most of the cases. Other times, when necessary, appropriate chemical solutions are used and, through the chemical reaction, they allow the uptake of any harmful compound in the air to be purified.
This type of wet scrubber is very simple and it owns the characteristic of being equipped with special filling bodies that have a large specific surface, and when they are wet by the washing liquid, they facilitate the contact between liquid and gas phase, resulting in the uptake of the pollutants.

MAX AIR FLOW RATE TREATED: 250,000 m3/h

APPLICATIONS: Chemistry - Food - Galvanizing - Plastic - Deodorization

- **Fume-cleaning system for polypropylene vapor**
- **Wet scrubber / Washing tower**
- **Airflow rate 20,000 m3/h**

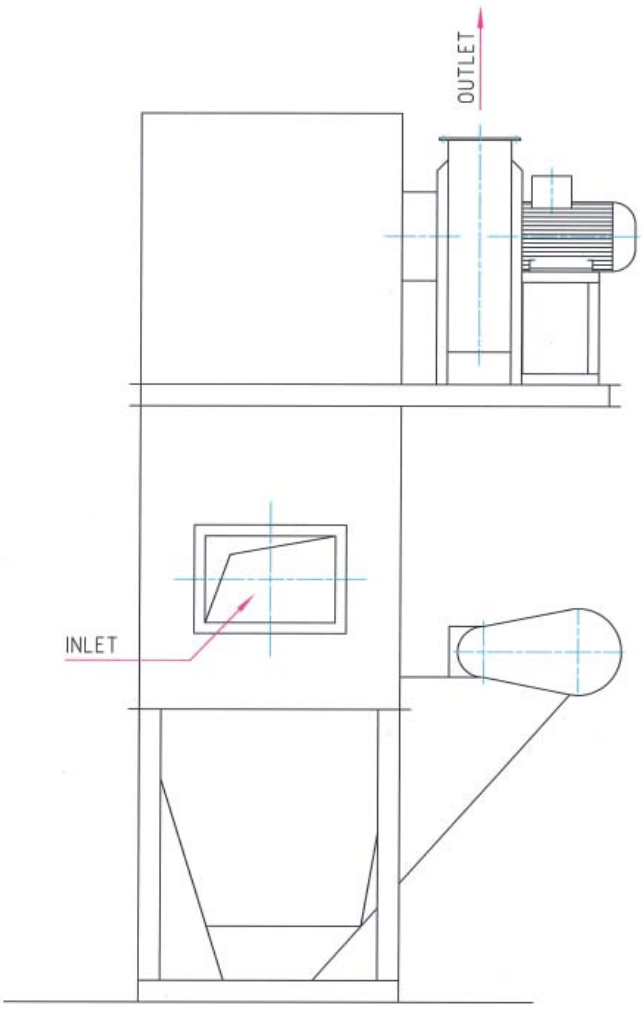
WET SCRUBBERS

FLOW LIQUID LAPPING SYSTEM

The wet scrubber, type ITR, is particularly appropriate to the collection of powders that are relatively easy to the decantation and with particle size larger than 2 microns.
The lower part (hopper) contains the washing liquid, whose level is easily adjustable such as to make the device operate with pressure drop more suitable to achieve the maximum efficiency of dust collection.
The inside part, where the air invests and drags the washing water, outlines a particular path, so that it establishes a deep mixing between the two elements mentioned above and then achieving the best result.
Finally we need to highlight the provision of motorized dredge sludge for removing the collected powders that decant at the hopper bottom, while the fan is supported by the upper body of the same unit.

MAX AIR FLOW RATE TREATED: 60,000 m3/h

APPLICATIONS: Foundries - Metallurgy - Chemistry - Food - Ceramics - Marble



- **Air cleaning system from foundries working sand**
- **Wet scrubber ITR type**
- **Airflow rate 35,000 m3/h**

DRY COLLECTORS

BAG FILTERS

Our dust collectors, bag filter type, belong to the series TM-TMS-TMD.
They are equipped with automatic cleaning through compressed air jet, where the operation and break times are controlled by a special electronic panel.
Basically, all are made up of the dust collection lower hopper, the central body of the bags containment and the upper plenum of the purified air resumption.
The TM series, the simplest, has the powdered air inlet at the hopper and the exit of the clean air from the plenum top.
The TMS series has the air entry and exit ducts overlapped alongside the bags containment body.
Finally, the TMD series is meant to larger executions with inlet and outlet air ducts always overlapped between two parallel bodies containing the filter bags.

According to the particular applications, the filtration means can be made up of Polyester fiber, Nomex, Polypropylene, Ryton, Dralon, Nylon and Teflon.

MAX FILTER SURFACE: 1,600 m2

APPLICATIONS: Foundries - Metallurgy - Chemistry - Food - Ceramics - Mechanics - Cement - Incinerating Marble - Plastic

- **Dust collection system from synthetic marble production**
- **Bag filter TMD type**
- **Airflow rate 120,000 m3/h**

- Dust collection system from plastic waste working
- Bag filter TM type
- Airflow rate 30,000 m3/h

- Dust collection system from RSU treatment
- Bag filter TM type
- Airflow rate 47,000 m3/h

- Fume-cleaning system from fuel oil boiler
- Bag filter TM type
- Fumes flow rate 33,000 m3/h

- Fume-cleaning system from fuel oil boiler
- Bag filter TM type
- Fumes flow rate 40,000 m3/h

DRY COLLECTORS

CARTRIDGE FILTERS

The cartridge filter, our FC series, is very similar to the <bag filter> TM series, except that, with the same filtering surface, they are more compact. This feature favors their use when there are not clear contraindications due to very difficult conditions of the dusty air to be treated. In fact, the automatic cleaning system through compressed air is less efficient in removing the dust attached to the cartridges, with pleated filtering surface, compared to the bags that usually have a smooth cylindrical surface.
The cartridges may be made up of Cellulose and Polyester.

MAX FILTER SURFACE: 240 m2

APPLICATIONS: Foundries - Metallurgy - Chemistry - Ceramics - Food

- **Fume-cleaning system from plasma cutting**
- **Cartridge filter FC type**
- **Fumes flow rate 18,000 m3/h**

- Dust collection system for calcium carbonate
- Cartridge filter FC type
- Airflow rate 8,000 m3/h

- Dust collection system for sugar coating powder
- Cartridge filter FC type
- Airflow rate 6,000 m3/h

- Dust collection system from sandblasting
- Cartridge filter FC type
- Airflow rate 4,000 m3/h

- Fume-cleaning system from welding
- Cartridge filter FC type
- Fumes flow rate 3,000 m3/h

DRY COLLECTORS

CYCLONE - FILTERING BAGS

The collectors of this group, our series CM, are made up of Cyclone and subsequent section with Filtering Bags, in a unique block.

They have fairly small sizes and, generally, are placed near the emission points. Besides they can be trucked, and then easily moved if necessary. They are ideal for collecting dust, even with high concentrations, coming from mechanical operations, screens, mills, conveyors and cleaners. The pre-separating cyclone, by stopping all the coarse dust, makes easy the task of the bags, which retain the rest of the finest particles. Because of that, the perfectly cleaned air can be released back into the work environment.

In the lower part of each block there are some drawers, which can be quickly removed for unloading the collected dust.

FLOW RATE TREATED: MIN 500 m3/h – MAX 5,000 m3/h

APPLICATIONS: Metalworking - Chemistry - Food - Rubber - Wood - Plastic

- **Dust separator for silver processing**
- **Cyclone-Filtering Bag CM type**
- **Airflow rate 4,000 m3/h**

DRY COLLECTORS

CYCLONES AND MULTICYCLONES

The simplest separator, with mechanical action, is the Cyclone.
As more advanced stage, we can also offer the Multicyclone (or Multicellular) type, which is made up of many small-diameter centrifugal cells working in parallel and whose number depends on the airflow rate to be treated. These separators can reach very high collection efficiency for powders of medium granularity and specific weight.

They carry out the collection of the dust particles by the centrifugal force, and the bigger is this force value the higher is the collection efficiency. The centrifugal force, applied to a mass, increases with the rotational speed increase of the same mass and with the rotating radius reducing of the described path. Then, by limiting the speed, in order to avoid abrasion problems in the same units, the collection performance can be increased by reducing the rotation radius above mentioned. This is one of the reasons because, starting from a certain airflow rate value, the multicellar is used instead of the cyclone.

MAX FLOW RATE TREATED: 40,000 m3/h

APPLICATIONS: Solid fuel boilers - Drying ovens - Calcinations - Fuller grates

- **Fume-cleaning system from solid fuel boiler**
- **Multicellular cyclone MC type**
- **Fumes flow rate 4,500 m3/h**

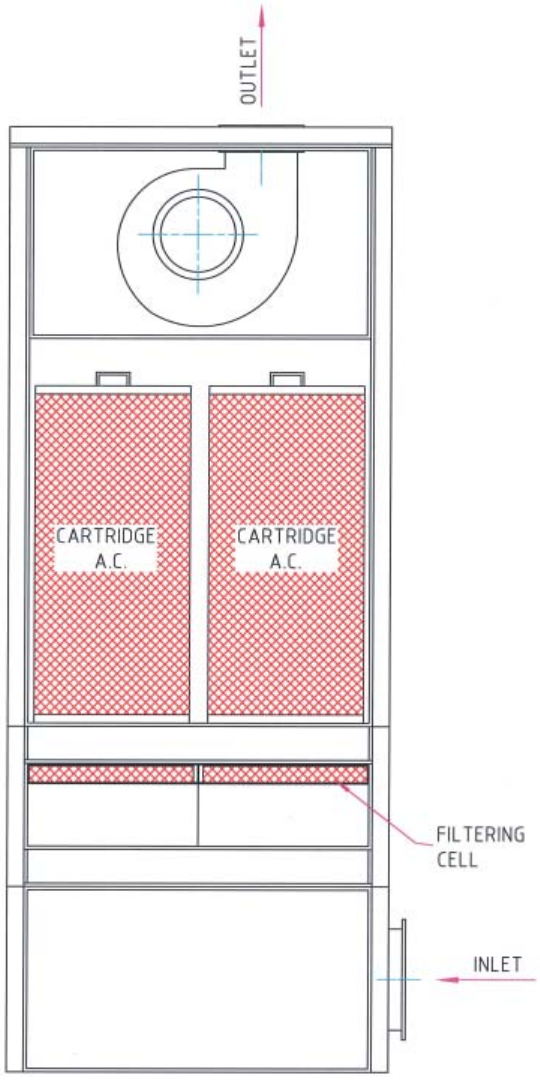
DRY COLLECTORS

ACTIVATED CARBON FILTERS

The activated carbon filters (or activated coal systems) of annular filling or cartridge types are particularly used for removing gas or vapors, which are otherwise difficult to be treated and which instead are well adsorbed by the micro-porous structure of the carbon. The porosity conferred to the carbon by the activation process creates an enormous specific surface, which can reach up to 2,000 m2/g.

The adsorption process is reversible and all or part of the molecules retained in the carbon pores can be liberated with the temperature increase. Moreover this process increases with a bigger concentration and molecular weight of the substances to be retained, while it reduces with a bigger relative humidity of the air. The molecules of an adsorbed gas may be released in the presence of another gas with greater affinity towards activated carbon.

APPLICATIONS: Removing solvents - Deodorization problems



- **S.O.V. adsorption system**
- **Activated Carbon Filter FCCA type**
- **Airflow rate 3,000 m3/h**

PNEUMATIC TRANSPORT SYSTEMS

Today there are numerous applications of pneumatic transport, thanks to the considerable advantages it provides for the conveyance of materials in the powder state, even if remarkable distances.

With the virtually complete elimination of the various mechanisms required in other types of conveyers, it is possible to carry out complex paths, with minimum overall dimensions, loading and unloading the material at different points.

Our installations, available for any type of material based on specific requirements, can be by suction, pressurized or mixed system.

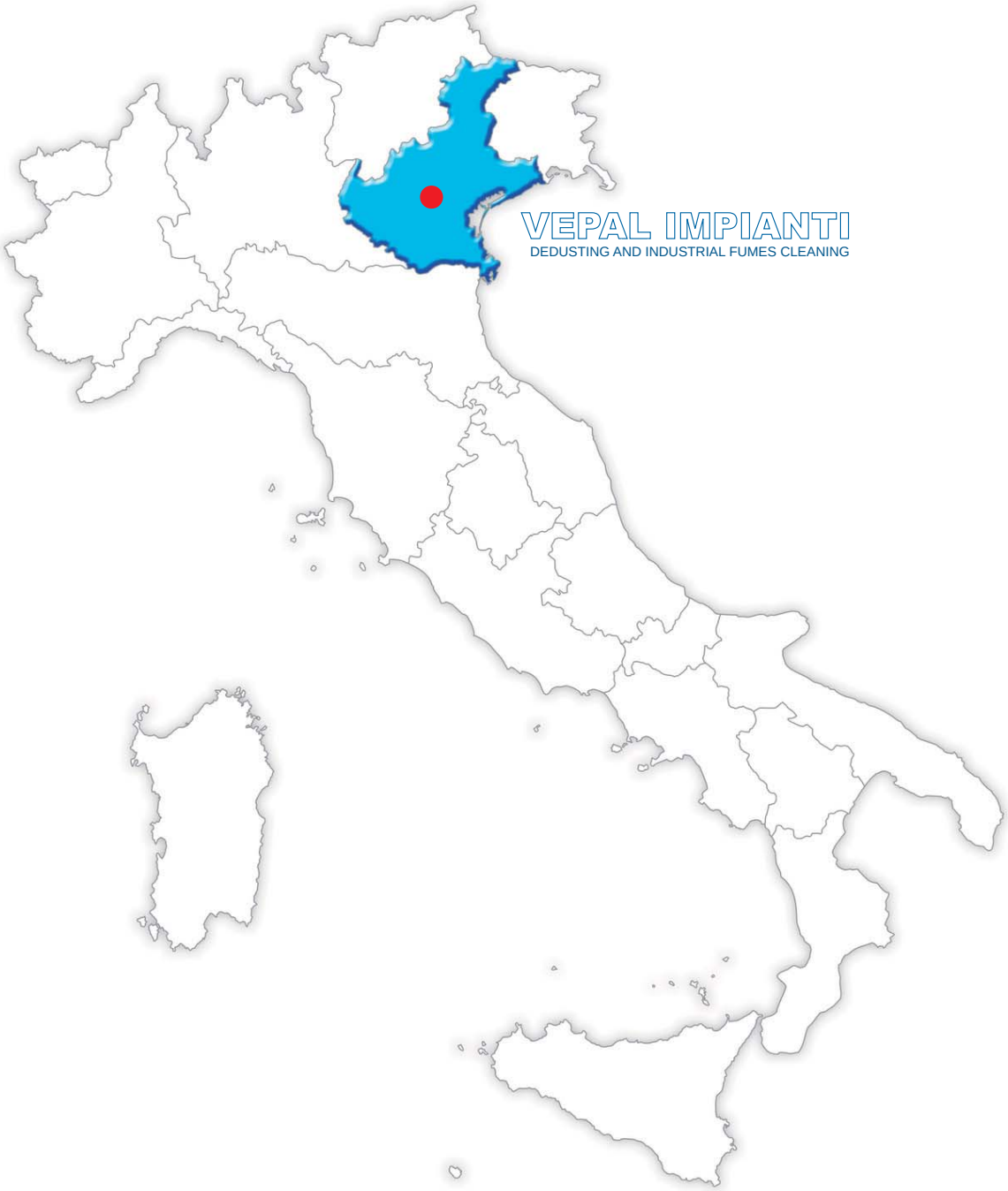
The essential components are: the fan or blower, the cyclone combined with a bag or cartridge filter and the conveyance pipes.

APPLICATIONS: Conveyance of sand - Calcium carbonate - Basalt - Granule - Wooden chips - Plastic

- **Foundry sand pneumatic transport**
- **Suction system**
- **Sand flow rate 10,000 kg/h**

- **Granule pneumatic transport with relative drying**
- **Pressurized system**
- **Granule flow rate 3,000 kg/h**

NOTES



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