



# Industrial aspiration systems

## Design and construction of customized hoods

### Application 1: metal processing

The customer is a company certified in several countries belonging to a group with more than 70 years of experience in the production of steel, stainless steel, bronze, lead, copper, zinc, brass and aluminium fibres and wool. These materials are used in the automotive industry, for example, for manufacturing brake pads, as well as in other sectors such as building.

### Gallery

The processing of these materials involves the continuous diffusion of production scraps (copper fiber trimmings) on the work surfaces, forcing the operator to stop for cleaning. Tecnosida® was contacted to design an automatic recovery system able to replace the inefficient system of manual recovery of by-products.

### Industrial plant for suction and by-products recovery:

After an adequate technical inspection, Tecnosida® designed a solution that ensure a quickly elimination of the trimmings from the work surface and, at the same time, allows the recovery of all residues.

The element of difficulty that had to be taken into account in the design of the collection system is represented by the particular geometry of the trimmings. Taking into account the above, Tecnosida® proposed the construction of a plant based on:

1. A pneumatic conveyor system that carries the trimmings to a collection point;
2. The use of dedicated exhaust hoods specially sized and located at the end of the work surface;
3. The installation of a circular cyclonic separator, made of sturdy electrowelded carbon steel sheet. It is equipped with a special unloading system, allowing the material to be collected on a conveyor belt going directly to the recovery mill.

Tecnosida® plant was built in compliance with the BAT of reference and is suitable for satisfying the needs of the customer.



## Application 2: sugared almond production

The customer works in the food sector dealing with the production of a wide range of chocolate and sugared almond of various types and tastes, ideal for celebrating different occasions. On the occasion of the transfer to a new production site, 19 drum mixers used for processing the product are installed. They consist of a rotating circular boiler in which the nucleus of the sugared almonds are introduced. They are then sprayed with a sugary liquid and dried by insufflation of hot air onto the candy core. This operation involves the emission, within the work environment, of fine powders deriving from the use of sugar.

The client company has contacted us to solve this problem and equip the new production site with a collection, conveying and filtration plant dedicated to the particular processing needs.

### Specifically sized hoods for food industry

Tecnosida<sup>®</sup> through its specialized technicians, carries out a preliminary inspection to analyze the production process used and to verify the type of machinery, its dimensions and the relative flow rates. Based on the information collected, Tecnosida<sup>®</sup> proposed:

- To design a dedicated drum mixer hood, designed and sized according to the production process and to the specific needs of each machine. This phase was carried out through an in-depth analysis of the drum mixers characteristics and the subsequent study aimed at the creation of hoods for optimally sucking the sugar powders;
- To dimension the conveyor line which, through a special pipe, carries the flow inside a filter for the dust removal;
- To install a Dustdown<sup>®</sup> filter dedicated to the treatment of the flow before being expelled into the atmosphere. It is a self-cleaning bag filter that uses a filtering physical element to separate the solid particles present in suspension from the air flow. The use of

this type of technology allows to treat fine and ultrafine powders, achieving very high filtration efficiencies.

Tecnosida® plant is realized in compliance with the BAT of reference (D.MF.01). It reduces the emissions within the limits established by law, solving the problem of our customer.



### Application 3: components production in the automotive sector

The customer company operates in the automotive sector and consists of several production sites located in Italy and in other European Countries. Each site is specialized in the production of products related to this sector, such as gaskets and machinery for the production of automotive components. Among the different production phases carried out by the customer, there is also the molding one which involves the emission of pollutants such as powders and fumes. Tecnosida® has been contacted to find a solution to this problem.

#### Localized collection of molding powders:

The best solution to meet our customer needs was to create an ad hoc and soundproofed hood system. In detail, for the headquarters that deals with the production of machinery, Tecnosida® realized a suction system composed of semi-closed cabins made with galvanized panels and automatic gates for insertion and extraction of molds. The system is completed by the presence of hoods placed at the service of the foaming machines used in the production of steering wheels, seats and other components for motor vehicles.

For the site that deals with the production of rubber and metal gaskets, we designed a series of soundproofed and specially sized hoods placed at the service of carousel machines, which are used for the printing of seal rings.

Hoods used in these projects represent the best solution in several production areas. They are designed to capture dust or other pollutants directly where they are produced and can be designed in various dimensions and geometry to meet our customers' needs.

The design phase is essential for the realization of hoods able to safeguard working zones and the health of the operators.

Our long experience in the field, enabled us to realize the best solution for our customers.

Tecnosida® realized the plant in compliance with current regulations and paying close attention to environmental protection.

