



PNEUMATIC TRANSFER
PNEUMATIC CONVEYING SYSTEM

ENVIRONMENT WASTE
FEED AND FOOD PROCESSING
MINERALS - CHEMICAL - CONCRETE

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INTRODUCTION

Pneumatic transfer consists in transporting a solid product using a gas (usually air) as a carrying medium.

SABE designs and builds different pneumatic transfer systems, such as:

- Diluted phase pneumatic transport, using vacuum or pressurisation.
- Dense phase pneumatic transport, using vacuum or pressurisation.
- Airslides

The advantages are:

- Easy transport
- Transport from A to B without junctions
- Little product retention
- Low cost for long distances
- Clean installation



DILUTED PHASE

The air must place the particles to be transported in suspension, which is why there is a departure speed of between 18 and 23 m/s. Transport pressures are usually between 0.2 and 0.8 bars (-0.5 bars max for vacuum).



PRESSURE

To be used for:

- Medium to long circuits (up to 300 m)
- Several infeeds
- Supply of several outfeeds
- High flows (up to 100 T/h)

To be avoided for:

- Abrasive products
- Fragile products of which the shape or grading needs to be protected.

VACUUM

To be used for:

- Short to medium circuits (up to 100 m)
- Several infeeds
- High flows (up to 100 T/h)
- Moderately abrasive products

To be avoided for:

- Supply of several outfeeds
- Highly abrasive products
- High flows and long distances

DENSE PHASE

There is a high concentration of product. It moves forward in plugs or dunes.

The quantity of air is significantly lower than for the diluted phase (10 to 20 x less for the same product) but the pressure loss is high (transport pressure up to 7 bars).



PRESSURE

To be used for:

- Medium distances
- A single infeed
- Several outfeeds
- Abrasive or fragile products

To be avoided for:

- Multi-product networks
- Long distances and high flows

VACUUM

To be used for:

- Medium distances
- Several infeeds
- Abrasive or fragile products

To be avoided for:

- Multi-product networks
- Long distances and high flows

AIRSLIDE

This technique is used to move the product forward by fluidising it on an air cushion.

It is very economical (in terms of investment and energy consumption).

Gravity makes the product move forward. It can therefore only drop. The flows obtained can easily reach several hundred tonnes per hour.

To be used for:

- Fluidisable products
- High flows
- Medium distances
- Curved trajectories

To be avoided for:

- Trajectories without the possibility of a slope.



EXAMPLES OF PRODUCTS TRANSFERRED USING SABE PT

- Minerals
- Gypsum, sulphite lye, plaster, mica
- Various concrete additives
- Cellulose, diatomaceous earth
- Premix, vitamins, lysine, methionine, magnesia oxide, psyllium shells, brewer's yeast, taurine, etc.
- Sand, cement, calcite, silica, additives, colouring, etc.
- Dietary and pharmaceutical fines, talcum powder
- Organic powder
- Cement
- Minerals, urea
- Petroleum coke, carbon black
- Semolina, flours (wheat, lentil, corn), couscous, potato flour, tapioca, etc.
- Flours, premix, emulsifier, salt, etc.
- Plastic pellets
- Silica fume, dry mortar
- Potato flakes
- Miscellaneous raw materials (salt, premix, lactose, etc.)
- Soda ash
- Plaster
- Miscellaneous raw materials
- Magnesia, kaolin, dolomite, ammonium sulphate, sodium sulphate, etc.
- Lime
- Powdered egg

INSTALLATION EXAMPLES

Products: flours, cereals, etc.

Type: Pressurised diluted phase PT

Flow: 50 T/h

Distance: 35 m H / 35m V / 4 angles

Piping diameter: 273 mm

Roots power: 132 kW

Products: silica fume

Type: Vacuum diluted phase

Flow: 600 kg/h

Distance: 6 m H / 6m V / 2 angles

Piping diameter: 60.3 mm

Suction turbine power: 3 kW

