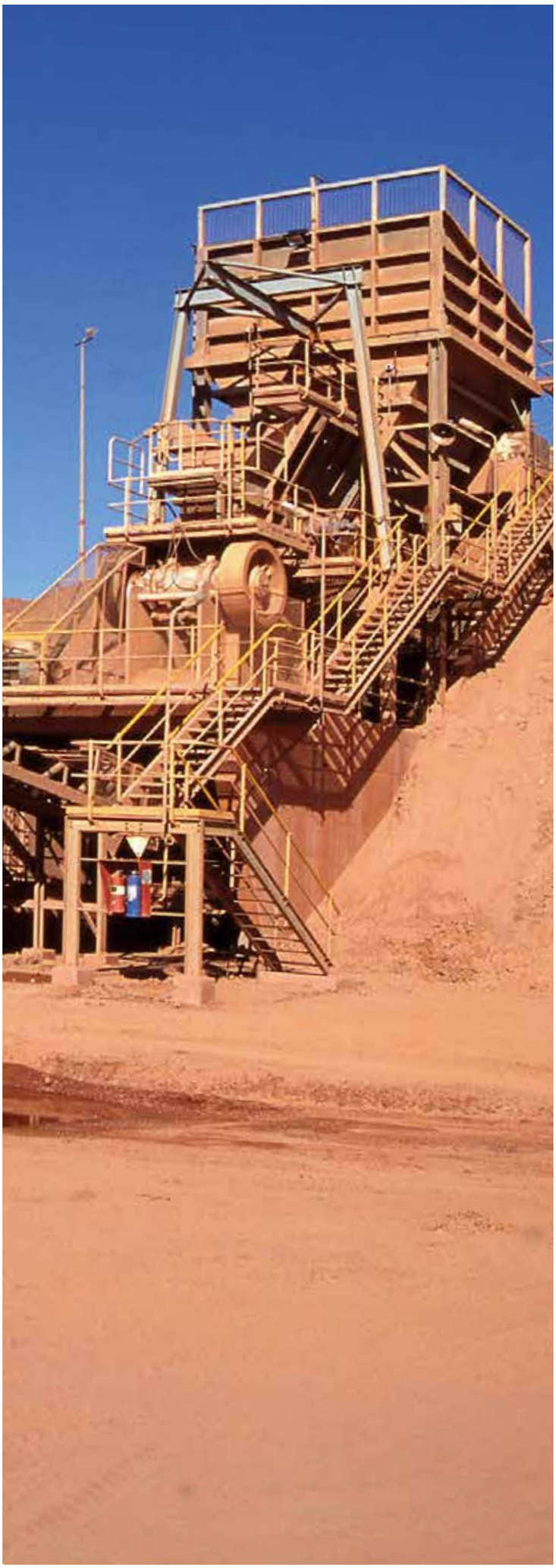


INERTIAL FILTERS

Inertial separation is an excellent system of pre-filtration, especially suitable in very dusty environments such as steel mills, cement factories or desert areas with the possibility of sandstorms.

This filtration system is based on the principle of conservation of momentum by the dust particles conveyed by the treated air flow. With a series of sudden changes in direction, the fluid layers are diverted toward the utilisation while the particulate, by inertia, continues its course to an area of the filter that is intended for the discharge of the separated dust.

The greater the mass of the particles and the velocity at which they are conveyed, the greater the efficiency of an inertial filter.

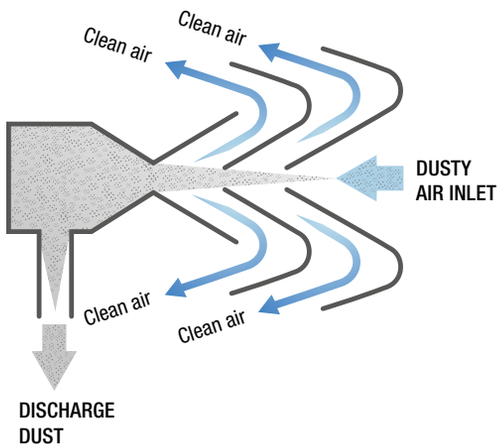
The separation of the particles from the primary air flow takes place inside the filter with no moving mechanical parts, which offers the following advantages:

- **reliability over time**
- **possibility of continuous operation**
- **simplicity of construction**
- **zero maintenance over the short- and medium-term.**

Periodic, simple visual inspections over the long-term should be programmed for general cleaning when installed in humid, marine environments or those subject to sandstorms.

The regulatory outlook for inertial filters is limited; there are publications of the ISO/TC 142 commission, specifically for ISO 12103.

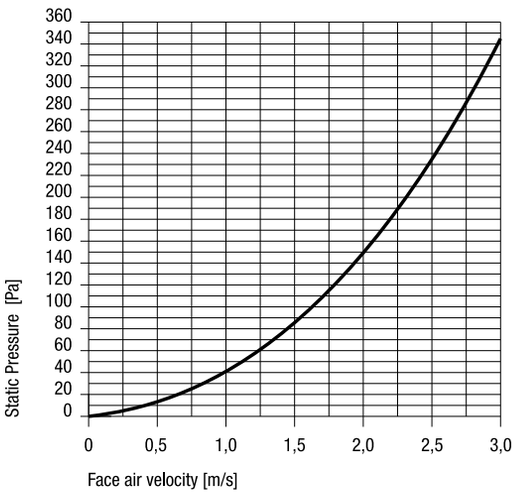
Globally, the former SAE J726 was replaced by ISO 5011 in 2020.

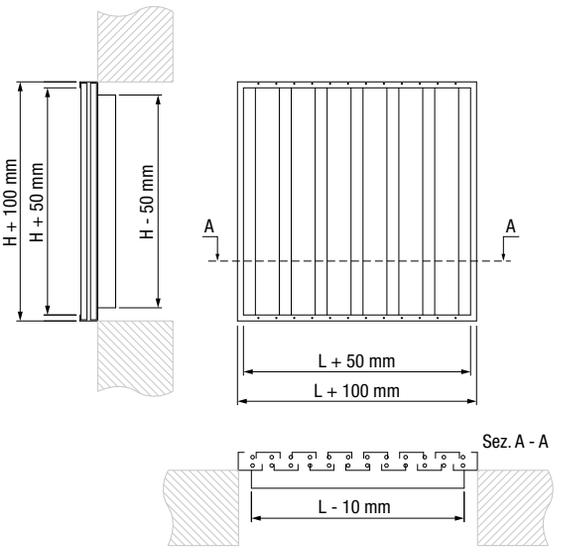


Sand trap grids

STL

This is the simplest and most economical system for separating coarse particles.
The grid can be made of aluminium, galvanised steel or stainless steel and is particularly appreciated due to its extremely shallow depth. This is a labyrinth shaped to create calm zones where particles, which have discharged their kinetic energy on impact against the metal surface, can precipitate to the bottom without being picked up by the air flow.
The bottom wall has circular outlets for the free discharge of retained solid particles into the environment.
The average weighted efficiency is 55% on particle sizes above 60-80 µm.





Multiple cyclone panel filters

MCS SPIN FILTER

Among inertial separators, this system is the most versatile.
Based on the principle of centrifugal separation, it can work over a much wider range of speeds and pressure drops than previous models.
The MCS filter cell is made of polypropylene and houses 64 mini-cyclones.
With broad modularity, it is especially suitable for variable load applications and environments with high concentrations of aggressive and abrasive dust.
The weighted efficiency is 90% on particles larger than 5 µm with a differential pressure of 250 Pa.

Inertial filters with moulded fins

INER ST

INER ST filters are static mechanical devices that use the principle of inertia to separate any dust and sand content from incoming air flow.

The air is channelled inside a dihedron consisting of:

- two side walls on which a series of slots have been cut
- an inclined rear wall acting as a hopper and dust collector
- an open bottom connected directly to the dust extraction fan.

The air flow is forced to deviate from its straight path as it exits the slots, while dust particles continue to impact the back wall to be collected and extracted.

The filter works properly with Fine Dust particulate at a differential pressure of 250 Pa. Five different types of the single module, called inertial cell, are manufactured to handle nominal flow rates from 2600 to 13000 m^3/h.

A single cell or multi-cell units are installed in a container, equipped with an adjustable dust discharge hopper connected to an extraction fan.

MATERIALS AND FINISH

– Single dihedron in CORTEN steel or AISI 316 stainless steel.

APPLICATIONS

Suitable for installations for indoor production environments with fresh air intakes on roofs or façades of industrial or technical buildings.

ACCESSORIES

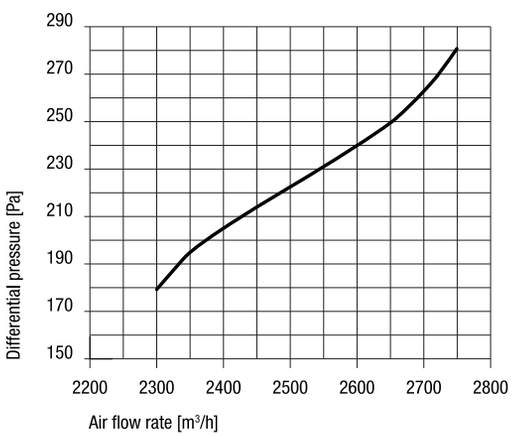
In continuous operation, it can be equipped with:

protection grid,

primary air interception damper in EN 1751 class,

mechanical post-filtration system in accordance with ISO 16890,

double fan for appropriate redundancy, both suitable for conveying abrasive dusts.



Dust	Efficiency at: 250 Pa
ISO 12103.1 A2 FINE	82.2%
ISO 12103.1 A4 COARSE	95.0%
Efficiency at nominal flow rate with test dust	

The characteristic curve refers to the performance of a single inertial cell.