



ATEX SYSTEM GUIDE

Dustcontrol[®]

Classification of hazardous dust environments

Zone 20

area where an explosive atmosphere exists in the form of combustible clouds of dust in the air, either permanently, for long periods or frequently.

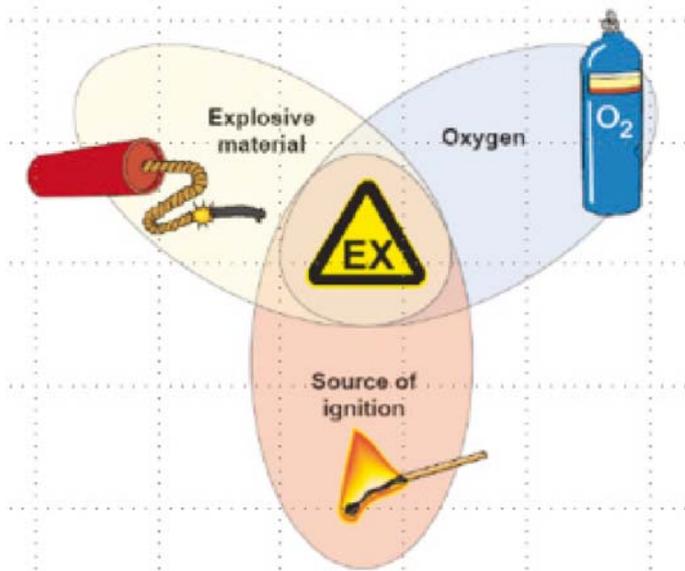
Zone 21

area where an explosive atmosphere exists in the form of combustible clouds of dust in the air during normal operation occasionally.

Zone 22

area where an explosive atmosphere in the form of combustible clouds of dust in the air is unlikely to occur during normal operation but, if it does occur, it is only for a short period.

Conditions for a dust explosion



A dust cloud of any flammable material will explode where:

1. the concentration of dust in air falls within the explosive limits, and
 2. a source of ignition of the required energy for that dust cloud is present.
- Conversely, an explosion can be prevented if one, or preferably both, of these conditions are avoided.

Risk Assessment

The facility owner is responsible to make a risk assessment and keeping it updated. The risk assessment shall contain the following five points:

1. Identify the hazards
2. Decide who might be harmed and how
3. Evaluate the risks and decide on precautions
4. Record the findings and implement them
5. Review the risk assessment and update if necessary
6. And inform the results hereof to the suppliers of the equipment

Recommended placement of the various equipment at the site

Vacuum Producers

The vacuum producer is the heart of the system. Here the negative pressure is created that drives the system. In Dustcontrol extraction systems, the vacuum level is generally from 6 – 40 kPa.

Our standard vacuum producers conform to electrical protection class IP54. By adding the DC HEPAbOX into the system design, any standard Dustcontrol vacuum producer (either turbo pump or radial blower) can be used for Atex applications, provided the vacuum producer is placed outside an Atex zone.

Control cabinets

The control system is used for the starting and stopping of the vacuum producer, turbo pump or high pressure fan. They also control filter cleaning and give condition indications. In the system control panels, additional functions can be built in by selecting options.

The control panels conform to electrical protection class IP 54 (IC529). The control cabinet should be placed outside an Atex zone. The control cabinets are also available as DC Green Systems, which will reduce considerably your energy consumption and carbon footprint.



Filter units

An extraction system should always be equipped with a filter unit. The filter unit separates coarse material in the cyclone body of the unit and fine dust in an internal arrangement of conical pleated cartridge filters. Pleated filters have very large filter areas in relation to their physical size. The filter units therefore have high capacity while maintaining compact overall dimensions.

Filter units complying to ATEX regulations should preferably be placed outside the building with 7 m of free, unoccupied space in front of the relief panel. If the filter unit is placed within the building the relief panel has to be led through an outer wall with again 7 m of free, unoccupied space in front of.

DC HEPAbox

The DC HEPAbox is intended to be used between the filter unit and the vacuum producer. If for any reason the filter unit fails, the DC HEPAbox stops the explosive dust from reaching the vacuum producer.

Mobile dust extractors

Dustcontrol has a range of mobile dust extractors to be used in an ATEX zone 22. The one phase variants include the DC 1800 EX and DC 2800 EX, the three phase variants include the DC 3800 Turbo EX and DC 5800 Turbo EX and on the pneumatic driven side we have the DC 1800 TR, DC 2800 TR and DC 3800 TR S EX.

Mobile dust extractors should be used for occasional, light cleaning purposes and are a good choice through regular housekeeping to reduce contaminated areas.

Accessories

To ensure that no additional electrostatic charges are being built up, from suction point to the tubing system, the use of Dustcontrol's assortment of ESD certified cleaning accessories, couplings and hoses is recommended.

Measured values to ground connection should be less than 1 MΩ. Dustcontrol has a wide variety of ESD certified suction hoses, sockets, sleeves, hose connectors and plastic sacks to fulfil all your needs.



DC 1800 EX



DC 2800 EX

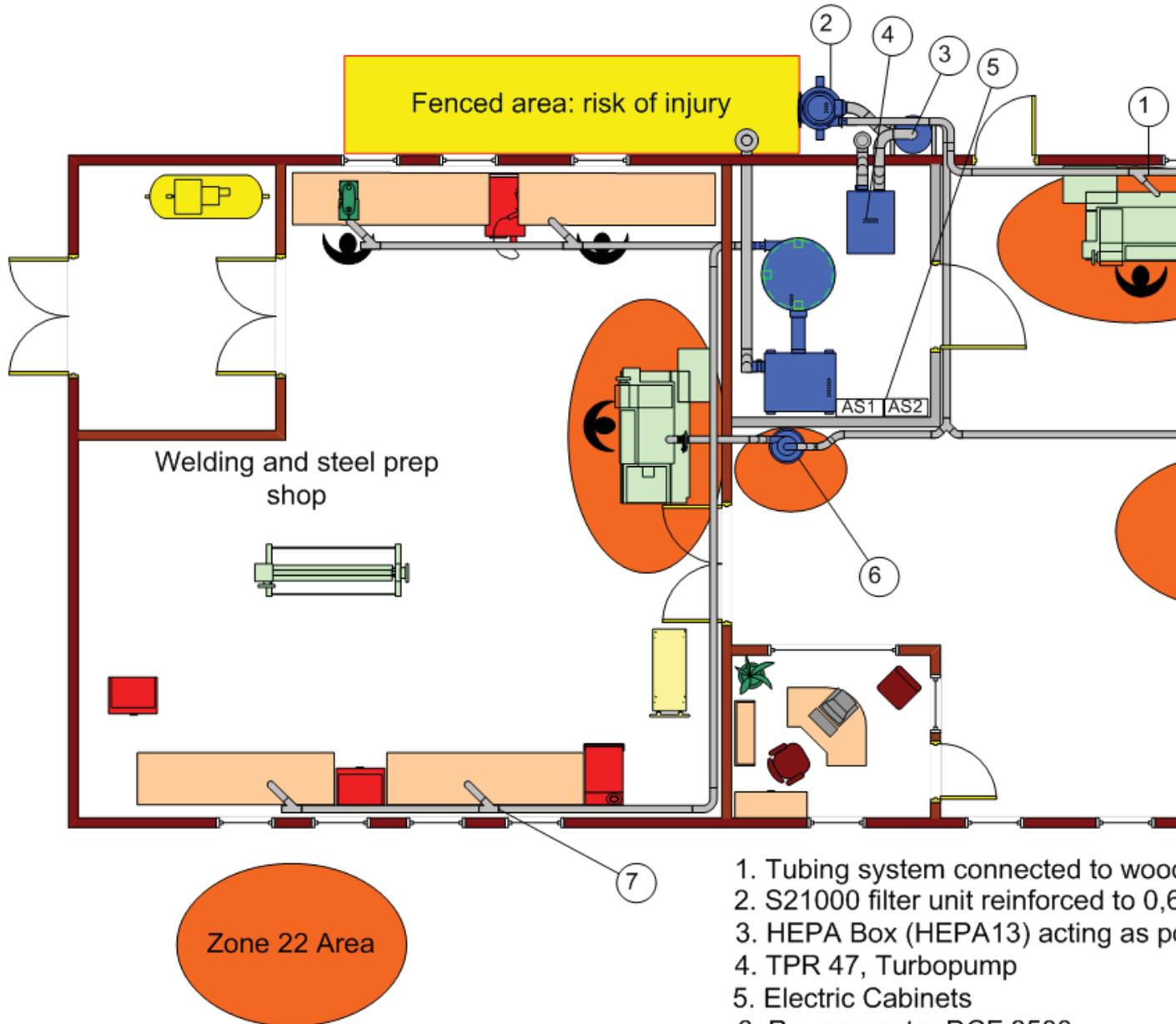


DC 3800 Turbo EX

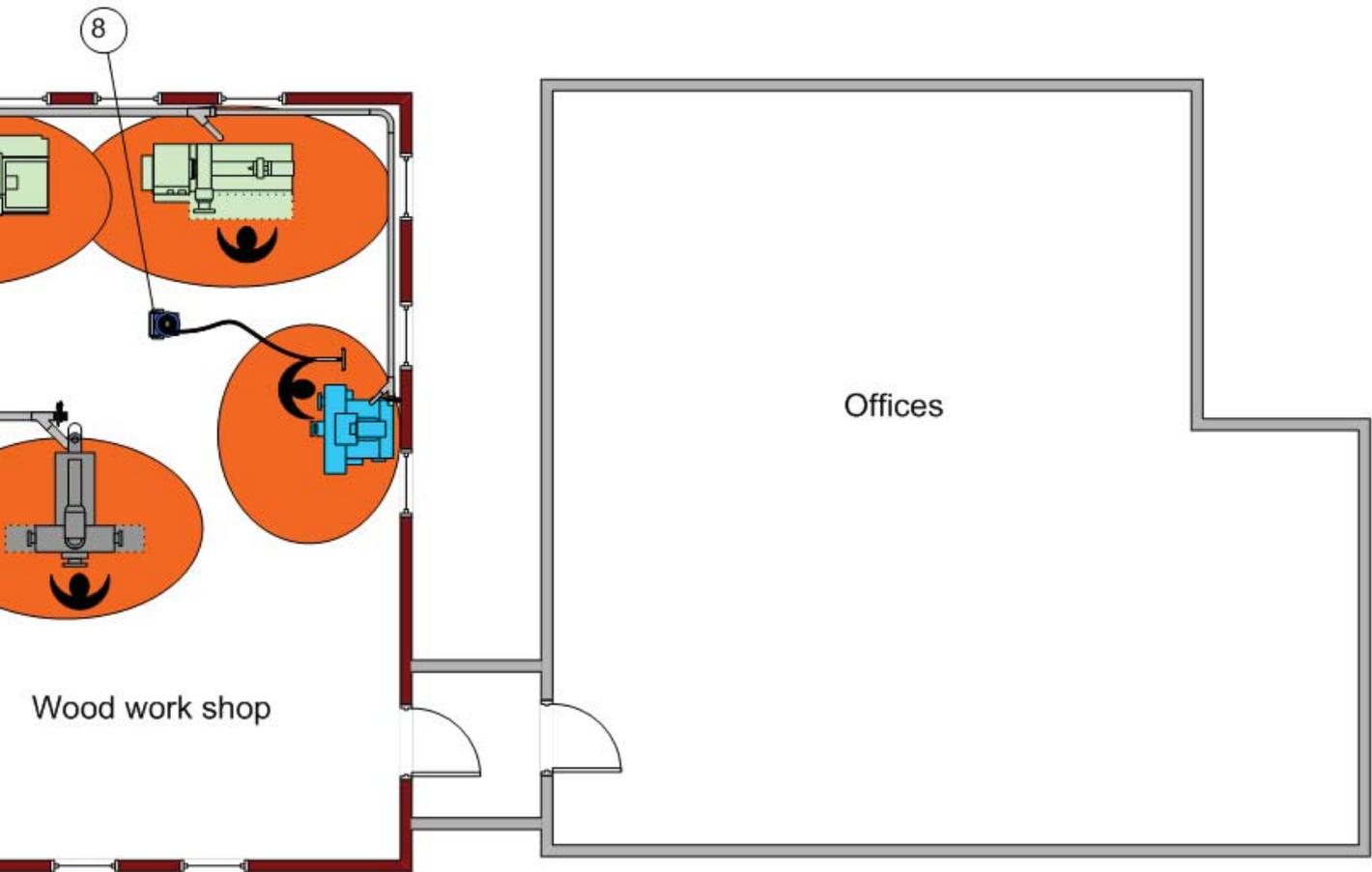


DC 5800 Turbo EX

Example of an AT



TEX installation



and working machines
6 bar with explosion relief panel FIKE DN400
police filter if S21000 leak

TECHNICAL DATA

Inlet mm	Ø 108
Outlet mm	Ø 108
Max Q	1000 m ³ /h
Filter antistatic	8.4 m ²
Vent	Ø 400
Q-Pipe	as option
Kst	<= 200 bar/m/s
Compressed air	4 l/s, 4 bar
Connection, hose	6/8 mm
El connection	24V DC, 12 W
Container	35 l
Filter cleaning with Reverse Pulse	
Soiled side air volume	251 l
Part no.	110301

S 11000 EX

Is of modular construction and is flexible to application. The inlet module can for example be both rotated and reversed. The S 11000 EX is either floor or wall mounted with optional legs.

TECHNICAL DATA

Inlet mm	Ø optional
Outlet mm	Ø 250
Max Q	1500 m ³ /h
Filter antistatic	12 m ²
Vent	Ø 400
Q-Pipe	optional
Kst	<= 200 bar/m/s
Compressed air	4 l/s, 4 bar
Connection, hose	6/8 mm
El connection	24V DC, 12 W
Container	60 l
Filter cleaning with Reverse Pulse	
Soiled side air volume	464 l
Part no.	119201

S 21000 EX

Is constructed of modules and is therefore very flexible. The inlet modules can for example be both rotated and reversed.

TECHNICAL DATA

Inlet mm	Ø optional
Outlet mm	Ø 250
Max Q	4000 m ³ /h
Filter antistatic	34 m ²
Vent	Ø 400
Q-Pipe	optional
Kst	<= 200 bar/m/s
Compressed air	4 l/s, 4 bar
Connection, hose	6/8 mm
El connection	24V DC, 12 W
Container	60 l
Filter cleaning with Reverse Pulse	
Soiled side air volume	1312 l
Part no.	105901

S 34000 EX

Is constructed of modules and is therefore very flexible. The inlet modules can for example be both rotated and reversed.

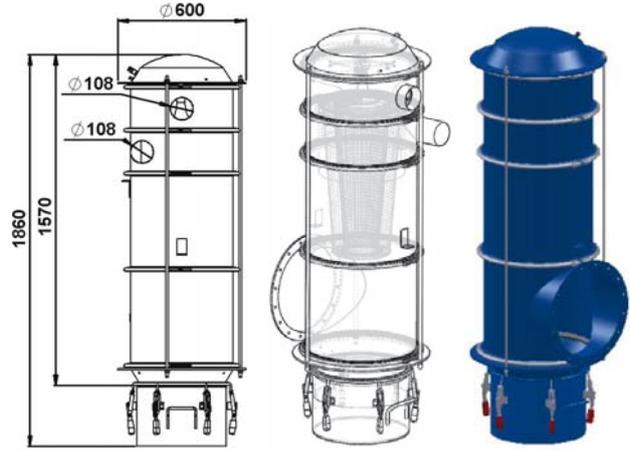
TECHNICAL DATA

In let	Ø 200
Outlet	Ø 200
Weight	39 kg
Flow	2500 m ³ /h
Filter area	10,2 m ²
Degree av separation	H 13
Negative pressure	40KPa
Part no.	1180

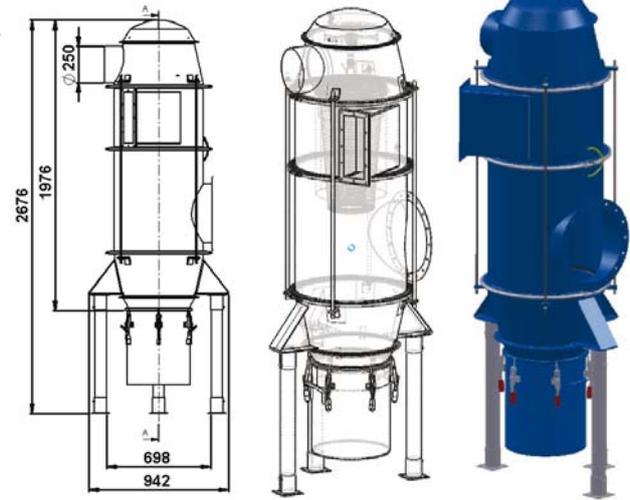
DC HEPAbOX

Intended to be used as a police filter between the filter unit and vacuum producer. If for any reason the filter fails, the DC HEPAbOX stops the dust from reaching the radial blower or pump. In this way all vacuum producers can be used for ATEX applications, provided that the vacuum producer is placed outside the zone.

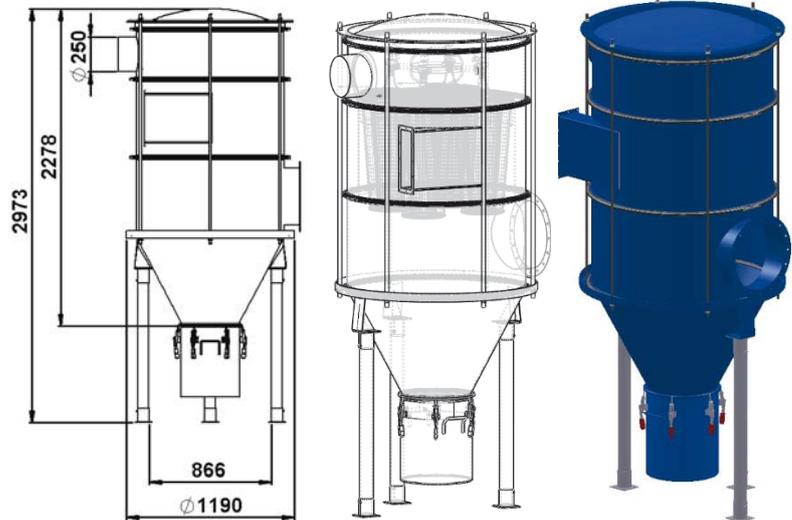
Designed for Zone :
DUSTSIDE 21
CLEANSIDE 22
OUTSIDE UNIT 22



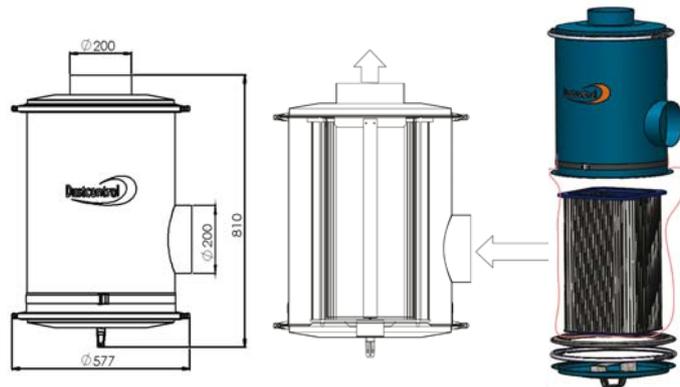
Designed for Zone :
DUSTSIDE 21
CLEANSIDE 22
OUTSIDE UNIT 22



Designed for Zone :
DUSTSIDE 21
CLEANSIDE 22
OUTSIDE UNIT 22



Designed for Zone :
DUSTSIDE 22
OUTSIDE UNIT 22



Dustcontrol has been operating in the field of environmental equipment for more than 40 years and has extensive experience in equipment and systems for potentially explosive dust.

Keeping the work environment clean and safe minimizes the risk of explosion, maximizes your production up-time, increases your products' quality and gives significant cost savings.

S 11000 / S 21000 / S 34000 EX are the new generation high vacuum dust collectors for potentially combustible dust. The units comply with the ATEX directive.

S 11000 / S 21000 / S 34000 EX have been created in order to meet various extraction requirements and to meet the challenges and rapid changes presented to modern industry. The systems are all marked with the EX symbol and are category 3D equipment according to directive 94/9/EC. This means that models with the EX symbol may be placed in areas classified as zone 22 according to directive 1999/92/EC.

NOTE!

Since July 1, 2006 all existing sites, as well as new sites, must be fully compliant with the ATEX directive.

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