



Integration to the Instruction Manual

Centrifugal fans



Special instructions for use of Atex centrifugal fans
in dangerous environment

This document is valid for all the types
and all the frames

Zone 21 e 22
Category 2 (and 3) GDc

Note:

This document is dedicated to the supplementary information for centrifugal fans in non sparking execution.

It must be used as an integration to the standard manual.



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1. Declaration of conformity

Each fan is supplied with a CE Ex declaration of conformity.




 EC Declaration of Conformity 	
The Manufacturer	MA.PI Sas Via F.Ili Di Dio, 12 PADERNO DUGNANO (MI)- Italy
hereby declares that:	
The Products:	Centrifugal fans Types VCAR-ARL - VCAS-A-A – VCB – VCBR - VCH-HL - VCHR-HRL – VCM - VCMRS-MR-MRL – VCN - VCNP
As described in the technical file n° FT 01/08 and in the relevant technical documentation are been manufactured in conformity with provisions of the following Council Directives:	
Machinery Directive 2006/42/EC , provided that the installation is correctly realised by the manufacturer of the complete equipment (Installation must comply with all relevant instructions).	
ATEX of 23 March 1994 94/9/EC In respect of product categories the fans are in conformity with provisions of the following harmonized standards:	
UNI EN 13463-1:2003 – Non electrical equipments for potentially explosive atmospheres Basic method and requirements	
UNI EN 13463-5:2003 - Non electrical equipments for potentially explosive atmospheres Protection by constructional safety “c”	
UNI EN 14986:2007 – Design of fans for potentially explosive atmospheres	
Marking of the ATEX fans	
 II 2 GDc T125	
Technical file FT 01-08 has been sent to the TUV Italia, (Notified Body n. 0948) which has acknowledged receipt of it with receipt nr. on	
Certificate of Incorporation	
The centrifugal fans above must not be put into service until the machinery into which they have been incorporated have been declared in conformity with the Machinery Directive.	
They maintain their conformity if correctly mounted according to our instructions.	
Signed by:	M. Mattera _____ M. Mattera _____
Title:	General Manager _____ Technical Manager _____
Date	gg/mm/aaaa

Fig. 1 – Fac-simile of the declaration of conformity

2. Foreword

This supplement to the standard instructions manual for centrifugal fans manufactured by MA.PI. sas, has been issued to satisfy the safety requirements against the explosion risks stated in the relevant standards and rules.

Only formed people on the risk of explosion can be authorized to operate in areas classified according to Atex rules.

Article 3 of 99/92/EC Directive

Prevention of and protection against explosions

With a view to preventing, within the meaning of Article 6(2) of Directive 89/391/EEC, and providing protection against explosions, the employer shall take technical and/or organisational measures appropriate to the nature of the operation, in order of priority and in accordance with the following basic principles:

- *the prevention of the formation of explosive atmospheres, or where the nature of the activity does not allow that,*
- *the avoidance of the ignition of explosive atmospheres, and*
- *the mitigation of the detrimental effects of an explosion so as to ensure the health and safety of workers.*

These measures shall where necessary be combined and/or supplemented with measures against the propagation of explosions and shall be reviewed regularly and, in any event, whenever significant changes occur.

3. Installation

The installation of the fans in the dangerous environment is under the responsibility of the final user.

Before the installation final user must:

- Value the risk of the explosion in the environment where the fan will be installed
- Identify the atmosphere (Gas or Dust)
- Define the Zone (0 – 1 – 2 or. 20 – 21 – 22)
- Define the category of the equipment (1 – 2 or 3)
- To be sure that the rating plate data are in conformity with the orders data.

In addition to the standard instructions for centrifugal fans, the user must follow the instructions here below described:

- To be sure of the integrity of the centrifugal fan
- Check the free rotation of the rotating parts in order to verify that no interference is present between rotating and fix parts.
- Assemble the centrifugal fan and the relevant flanges
- Connect the eathing point with the main circuit
- Follow particular instruction for the electric motors, (EExd – EExe – EExn – DIP) supplied by the motor manufacturer.

4. Marking

Each fan is equipped with a rating plate showing the main data.






Fig. 2 – Sample of main rating plate

5. ATEX mark

The identification of the fan in Atex execution is shown in the main rating plate.

The content is:

- The reference of the manufacturer
- The **CE** mark
- The  logo to identify Atex equipments
- The group (II = surface industry; I = mines)
- The category (2 o 3)
- The type of atmosphere (G= gas; D= Dust)
- The temperature class (T1 ÷ T6 or. Tmax)
- The reference of the technical file
- The symbol  if the equipment has been modifier or repaired
- The year of the **CE**  marking

Safety marking, as described in the European Directive 94/9/EC and in the relevant harmonized standards, must show the category of the equipment for the relevant zone.



6. Legal provisions

The execution of the fans is made according to the rules and laws applicables in Italy and in the European Community.

To complete the instructions stated in this manual the user must follow the requirements of:

- European Directive 99/92/EC “*Essential health safety requirements for workers operating in the potentially explosive atmospheres*”
- Local laws - *Different for each European Country.*
- European Directive n°2006/42/EC - Machines
- European Directive 94/9/ EC- ATEX

7. Standards

In additions to the normal standards, these fans are been manufactured according to the follow:

- EN 13463-1 – Non electrical equipment for potentially explosive atmosphere
Basic method and requirements
- EN 13463-5 - Non electrical equipment for potentially explosive atmosphere –
Protection by constructional safety (c)
- EN 14986 – Design of fans for potentially explosive atmosphere

8. Installation in potentially explosive environment

The installation of the fans in potentially explosive environment, if not otherwise specified, is under the total responsibility of the final user.

- Dangerous Zone

In order to ensure the safety of the plant all the area near to the fan (2 meters through the 3 orthogonal directions) , if not otherwise specified must be considered “Zone 2 for gas and 22 for dust”.

- No smoking

All the classified zone are non smoking



Fig. 3 – No smoking symbol

- Earth connection

To be sure that the earth point of the fan is connected to the main circuit.



Fig. 4 – Earth symbol

a. Standards to implement the Directive 99/92/EC

- IEC 61241-10 - Classification of the areas where dust is present
- EN 60079-10 - Classification of the areas where gas is present
- IEC 60079-14 – General rules
- IEC 61241-17 – Rules for maintenance in environment with dust
- IEC 61241-19 - Rules for repair of equipment Atex

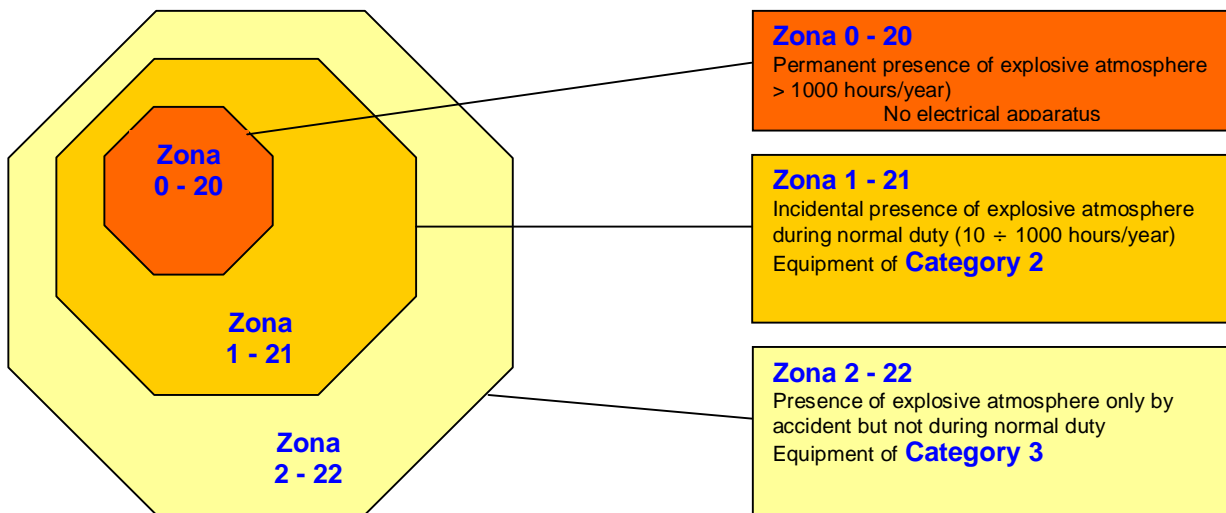


Fig. 5 –Classification of the zone Atex

b. Put in service

Classified zones must be indicated with the follow signal.

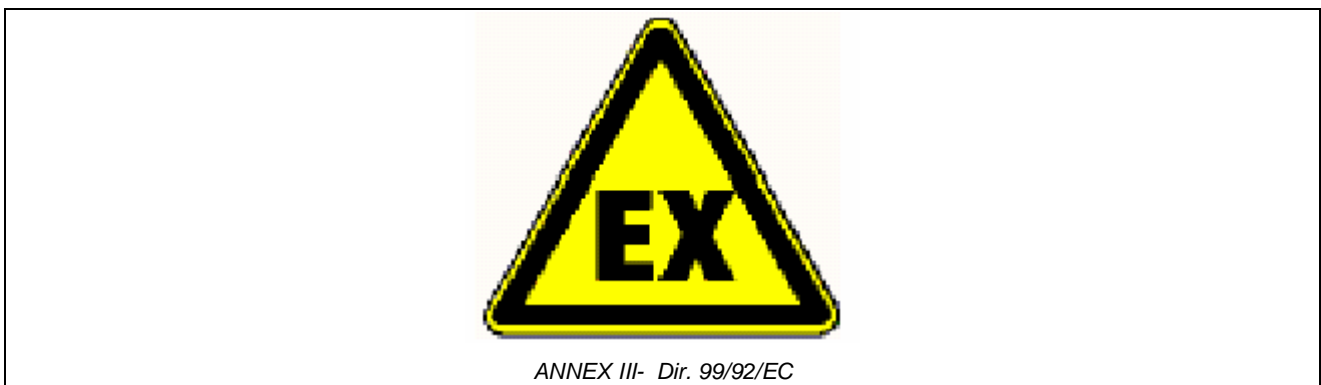


Fig. 6 – Places where explosive atmospheres may occur

Explosion protection document

In carrying out the obligations laid down in Article 4, the employer shall ensure that a document, hereinafter referred to as the ‘explosion protection document’, is drawn up and kept up to date.

The explosion protection document shall be drawn up prior to the commencement of work and be revised when the workplace, work equipment or organisation of the work undergoes significant changes, extensions or conversions.

9. Normal and special maintenance

In addition to the normal maintenance, the fans placed in explosive atmosphere with dust requires particular attention to the layer of dust on the external surfaces.

The fans in execution Atex are designed to take into consideration a layer \leq of 5 mm. Ignition temperature are defined according to this layer.

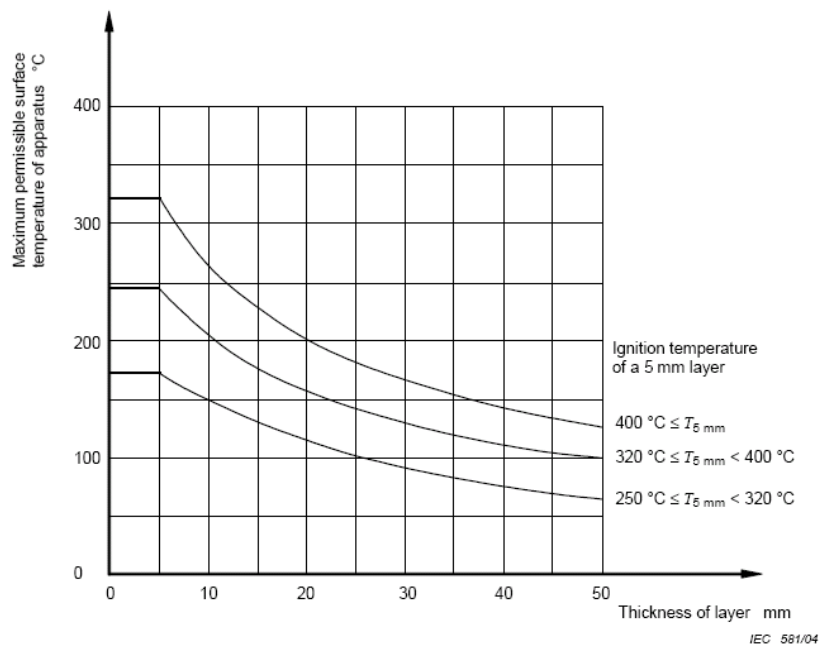


Fig. 7 – Ignition temperature in function of the layer of the dust

As you can see the increase of the layer of dust reduce the ignition temperature. So, the risk increase automatically.

Employer must, in function of the experience, define a special procedure for clean periodically the surfaces in order to avoid a layer of dust > 5mm.

The layer of dust does never overcome 5 mm

10. Use of the manual

This manual is given to the employer together with the fan and must be applied by all the people involved in the work.

MA.PI sas, invite the responsible of the plant to read carefully before to start the production.

11. Modifications and repair

Any modification or repair of the fan must be made by the manufacturer or by a service organization duly formed in the Atex directive and relevant standards.

Spare parts must be original and certified and supplied by the manufacturer.

All the modifications or repairs must be recorded by:

- The manufacturer
- The Repairer
- The customer – end user

Any repair or modification made in a different way is a cause of the invalidity of the warranty and the validity of the certificate.