

KLIMAWENT S.A. produces wide range of fans designed for use in areas, where explosive atmosphere, i.e. mixture of flammable gases, vapours or mists with the air, is likely to occur, whereby after the ignition sources are initiated, the burning (combustion) of the whole mass expands within the whole mixture.

Our fans meet the requirements of 94/9/EC Directive of the 23 March, 1994 (from 20 April 2016 Directive 2014/34/EC). Our assortment of Ex fans cannot be used for conveying the air that contains:

- viscous contamination that can glue up on the device surfaces,
- aggressive pollutants which might have destructive effect on the device structure.

The manufactured by KLIMAWENT S.A. fans are safe and cannot become a source of ignition of the explosive atmosphere, under the condition that they are used in areas, for which they are constructed and executed.

Duties and activity of the user (employer) are stated in the 1999/92/EC (ATEX 137), also called ATEX USERS, specifying the minimum requirements of occupational / work safety, in places where explosive atmosphere is likely to occur (Statute of Ministry of Economy of the 8 July, 2010).

Classification of areas of explosion risk is the duty of user, in his place, where the technological process causes explosion risk, and where such a hazard occurs. Here are valid subsequent standards:

- PN-EN 1127-1: Explosive atmospheres. Protection against explosion and prevention from explosion. Basic terminology and methodology,
- PN-EN 60079-10-1: Explosive atmospheres. Classification of areas. Atmospheres of gas explosion,
- PN-EN 60079-10-2: Explosive atmospheres. Classification of areas. Atmospheres of dust explosion.

Workplaces where explosive atmospheres are likely to occur, should be classified in accordance to division into hazard zones, and with reference the above mentioned Directive.

Selection of fans for workplaces, where explosive atmospheres might occur, ought to be classified with reference to categories that are appropriate to zones of explosion hazard.

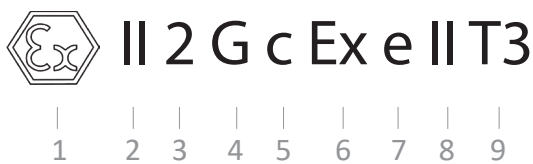
EXAMPLE OF CLASSIFICATION OF THE EXISTING GASES

Explosion group		Temperature classes			
		T1	T2	T3	T4
I (methane)		methane			
II	IIA (propane)	acetone, methyl alcohol, ammonia, methyl chloride, vinyl chloride, chlorobenzene, ethane, o-xylene, acetic acid, ethyl acetate, methyl acetate, propane, toluene, carbon oxide	ethyl alcohol, propyl alcohol, petrol, n-butane, ethyl chloride, n-propyl acetate	petrol, diesel, aircraft fuel, n-pentane, n-hexane, n-heptane, n-octane, n-decane, furnance oil	acetic aldehyde, ethyl ether
	IIB (ethylene)	hydrogen cyanide, ethylene, technical propylene, city gas	butadiene, di-methyl ether, ethylbenzene, ethylene, ethylene oxide	acrolein, hydrogen sulphide	1,4-dioxan, ethyl ether, acetic aldehyde
	IIC (hydrogen)	hydrogen	acetylene	hydrazine	

KLIMAWENT S.A. manufactures fans meant for application in areas of risk of gas explosive atmosphere, and fan chambers designed for operation in areas of hazard of gas- and dust explosive atmosphere.

MARKINGS OF FANS

Fans for gas atmosphere



- 1. Means Ex-proof features of the device.
- 2. „II” – Group II of the device – for application in areas of explosion hazard, but in other places than underground mining plants, of hazard of methane explosion (firedamp) or carbon dust explosion.
- 3. „2” – Category 2 – devices designed and executed to meet the operational parameters, as specified by manufacturer, and to obtain high level of protection. These devices are designed for areas, where explosive atmosphere, i.e. gas, vapour, mist or dust-air mixture, is sporadically likely to occur. They can work in zones 1 or 2 (21 or 22) and are equipped with protections against explosion, therefore provide the required level of protection, even in cases of frequent disturbances or defects that should be taken into account.
- 3. „3” – Category 3 – devices designed and executed to meet the operational parameters, as specified by manufacturer, and to obtain the normal level of protection. These devices are designed for areas, where explosive atmosphere, is very sporadically likely to occur, and when such atmosphere occurs, it happens rarely and for short time. They can work in zone 2 (22) and are equipped with protections against explosion, and provide the required level of protection during normal work.

Fans for gas- and dust atmosphere



- 4. „G” – designed for work in atmospheres of explosion risk of gas, vapour and mist.
- 4. „G/D” – designed for work in atmospheres of explosion hazard of gas, vapour, mist and dust mixture.
- 5. „c” – constructional safety of the appliance.
- 6. „Ex” – a marking for electrical device, constructed and tested in accordance with the European Standards.
- 7. „e” – construction type (motor) — reinforced construction.
- 8. „II” – sub-group of explosiveness (IIA, IIB, IIC): refers to the whole group (without A, B, C), means that the fans can be used in all explosiveness sub-groups.
- 9. „T3” – temperature class of the device (T3 is +200°C), refers to the highest surface temperature of the device, (can work in classes T2 and T1).
- 9. „T4” – temperature class of the device (T4 is +135°C), refers to the highest surface temperature of the device, (can work in classes T3, T2, T1).