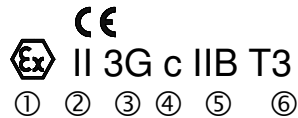


From 01/07/03 the Directive 94/9/EC (ATEX 100a) comes into force. This provides for a European-wide regulation of explosion protection. The Directive defines the rules for issuing products for use in potentially explosive atmospheres. The CE marking will be supplemented with an identification in accordance with ATEX100a:



The identification in accordance with ATEX is divided into

- ① Special mark for the prevention of explosions
- ② equipment group II, for all Ex applications not belonging to group I (underground work or fire damp)
- ③ equipment category 3 applies to products which have been constructed in such a way that they ... can be operated ... in environments where the creation of ... explosive atmospheres is unlikely (ATEX guidance). These devices may be used in zone 2.  
*The previously used zone division now only applies to the operator. Devices are being divided into categories. The equipment category is always one number higher than the corresponding zone. (Devices from category 2 may thus be used in zone 1). The operator commits to evaluate the ignition hazards. Experience shows that device category 3 is often sufficient upon inquiry. Rosenberg fans are exclusively suited for the transportation of gas/vapour/mist and are therefore additionally marked with G. Devices marked D may be used in dusty atmospheres.*
- ④ Type of protection "c" constructive safety. Fans are generally designed in type of protection "c". This defines the requirements on material combinations, the gap size, the belts, bearings, ...
- ⑤ Explosion group IIB. The crossivity of the gases has to be noticed. The fans are **not suited** for transportation or deployment in such an environment (e.g. **acetylene, hydrosulphide**)
- ⑥ Temperature category T3, which limits the highest surface temperature where a gas could ignite to 200°C. The temperature category depends mainly on the motor used. Upon request some fan types can be designed in T4 (max. surface temperature 135°C).

The fans marked as above are in principle intended for use in zone 2 and for transporting gas/steam/vapour (! no dust laden air !).

According to Directive 94/9/EC fans are non-electrical devices connected to electrical devices (motors). The connected motors may be designed with at least equivalent ignition protection, e.g. "d" (flameproof enclosure) or "e" (increased safety), or with a higher category (e.g. 2G for use in zone 1). For all motors as electrical devices for category 2G there will be done a EC-type examination by a notified body; a EC-type examination certificate will be issued.

All Rosenberg fans are allocated to equipment category 3 (for use in zone 2) as standard. Upon request device category 2 for use in zone 1 might be possible for some types.

According to 94/9/EC the technological knowledge, which can change rapidly, must be taken into account as far as possible and be utilized immediately. Rosenberg fans in explosion protected design have been manufactured and tested to the requirements of the following standards:

- EN 1127-1 explosion protection
- EN 12463 non-electrical devices for use in potentially explosive atmospheres
- EN 14986 design of fans working in potentially explosive atmospheres

## Notes for operators

On 01/07/03 the Directive 1999/92/EC (ATEX 137) comes into force. The following should be noted, among other things:

### 1. Zone evaluation

The operator of a plant with potentially explosive areas is obliged according to Directive 1999/92/EC (ATEX 137) to evaluate this operation into zones. This evaluation and its extent is determined by the possible source of release and its parameters (e.g. speed of release, ventilation, concentration, flashpoint of liquids).

Zone	Occurrence of potentially explosive atmosphere	Guidance on frequency of occurrence	Device safety must be guaranteed	Examples
0	continuously, long periods, or frequently	more than 1000 times per year	even for rare faults	Areas above flammable liquids (in a tank) without continuous ventilation
1	occasional	10 to 1000 times per year	for expected faults	Relief valve which can release flammable substances during normal operation
2	infrequently and for a short period	1 to 10 times per year	during normal operation	Flanges, seals or other connections for which no release of flammable substances is expected during normal operation

### 2. Explosion protection document

In addition to the evaluation into zones ATEX 137 requires the operator to prepare an explosion protection document. This must evaluate the risks arising from a potentially explosive atmosphere and the probability of the occurrence of a potentially explosive atmosphere and of sources of ignition with respect to the plant and the materials used. The explosion protection measures already in place and still required must be listed.

The following list shows examples of possible sources of ignition:

- hot surfaces
- open flames
- mechanically created sparks
- electrostatic or atmospheric discharge
- discharge
- electric arcs
- ultrasound
- electromagnetic, ionising or optical radiation

### 3. Warning notices

Potentially explosive areas must be identified using triangular warning sign W21

For additional information on the application of ATEX or the explosion protection document please contact us .

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