3243 en - 10.2003 / e

LSPX - FLSPX

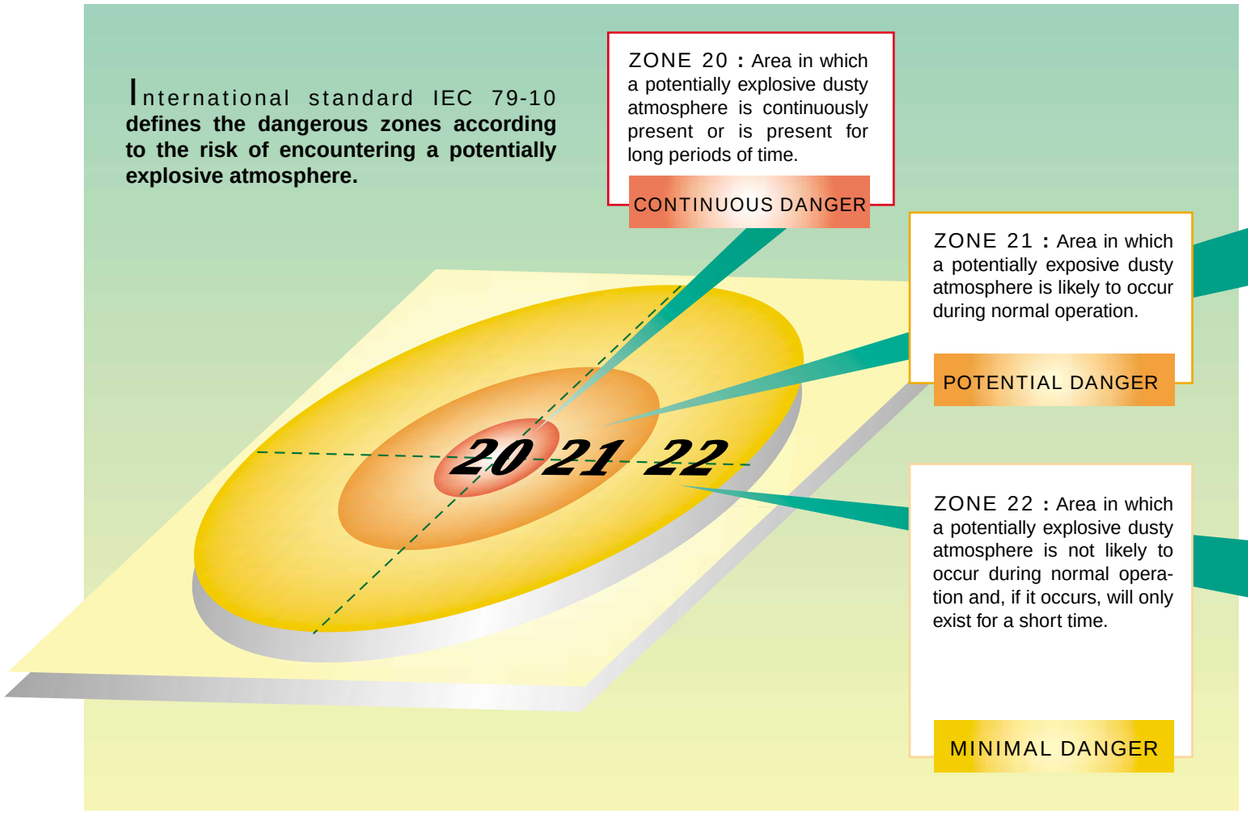
Drive systems

Potentially explosive dusty atmospheres

ATEX DIRECTIVE : CE MARKING

From 1st July 2003, all motors marketed in the EC and designed to operate in zones where there is a high risk of explosion will have to be certified as conforming to the **ATEX european directive* 94/9/EC (ATEX 95),** entitled "Equipment and protective systems intended for use in potentially explosive atmospheres". **All potentially explosive dusty atmospheres are affected by this directive** : food processing, sugar refineries, breweries, cement works, refineries, chemical industry, pharmaceutical industry, textile industry, etc.

International standard IEC 79-10 **defines the dangerous zones according to the risk of encountering a potentially explosive atmosphere.**



ZONE 20 : Area in which a potentially explosive dusty atmosphere is continuously present or is present for long periods of time.

CONTINUOUS DANGER

ZONE 21 : Area in which a potentially exposive dusty atmosphere is likely to occur during normal operation.

POTENTIAL DANGER

ZONE 22 : Area in which a potentially explosive dusty atmosphere is not likely to occur during normal operation and, if it occurs, will only exist for a short time.

MINIMAL DANGER

EC TYPE-EXAMINATION CERTIFICATE

PRODUCT DEFINITION

Motor protection method :

- **IP6X**
- **Maximum surface temperature**

CE **marking : II - category 2 - D**

Motor protection method :

- **IP6X**, if conducting dust
  IP5X, if parting dust
- **Maximum surface temperature**

CE **marking : II - category 3 - D**

SELF CERTIFICATION

EUROPEAN STANDARDS

- EN 1127.1 **: Potentially explosive atmospheres : prevention of explosions and protection against explosions.**
- EN 50281.1.1 **: Electrical apparatus for use in the presence of combustible dust : rules for construction and testing.**
- EN 50281.1.2 **: Electrical apparatus for use in the presence of combustible dust : selection, installation and maintenance.**
- EN 13463.1 to 8 **: Non-electrical equipment for use in potentially explosive atmospheres.**

** Directive transposed into national law in all countries of the European Community: Decree No. 96-1010 in France, No. 400/96 in Spain, SI 1996/192 in England, etc.*

THE ROLE OF A BUILDING USER

In establishments with electrical installations in categories which are likely to present a risk of explosion, ***the user is required to :***

- ***define the zones*** *in which* ***potentially explosive atmospheres*** *are likely to occur,*
- ***select electrical equipment*** *suitable for use in the zones defined above,*
- ***provide the appropriate installation****,* ***operating*** *and* ***servicing conditions****, for this equipment.*

MANUFACTURER'S OBLIGATIONS

With the objective of ensuring the ***SAFETY*** *of PERSONS and EQUIPMENT in all ZONES presenting a RISK OF EXPLOSION, the manufacturer must :*

- ***Design and manufacture*** *products in accordance with safety requirements.*
- ***Mark products*** *in conformity with the directive.*
- ***Provide CE type certification*** *undertaken by the notified body for category 2, or by the manufacturer for category 3.*
- ***Supply an instruction manual*** *with the product.*

Potentially explosive dusty atmospheres : LEROY-SOMER OPTIONS

SIGNIFICANT DATES FOR CE MARKING - ATEX

29/07/1998
French ministerial order **ATEP 98 70265A** concerning only silos and storage installations for any organic product generating inflammable dust

IN ANTICIPATION OF THE ATEX DIRECTIVE

30/08/2000
Installations concerned to be brought into conformity before this date

01/07/2003
The ATEX directives 94/9/EC (ATEX 95) and 1999/92/EC (ATEX 137) concern all installations in atmospheres containing explosive gases and/or explosive dust

MANDATORY USE OF PRODUCTS CONFORMING TO THE ATEX 95 DIRECTIVE

01/07/2006
Bringing work places currently in use into conformity by 30/06/2003, including sites where explosive atmospheres may occur.

PRODUCT CERTIFICATION

All LEROY-SOMER products which can be used in zone 21 or zone 22 are certified by **INERIS**, a body notified by the European Commission.

INERIS* INSTITUT NATIONAL DE L'ENVIRONNEMENT INDUSTRIEL ET DES RISQUES

Category 1 - Zone 20	EC type-examination certificate (A.III) by N.B.* or On-site verification by N.B.	Production quality control (A.IV) Approval by N.B. or Product verification (A.V) by N.B.
Category 2 - Zone 21	EC type-examination certificate (A.III) by N.B.* or On-site verification by N.B.	Production quality control (A.VII) Approval by N.B. or Type conformity (A.VI) N.B. responsible for test
Category 3 - Zone 22	Internal quality control (A.VIII) or On-site verification by N.B.	

** N.B.: Notified Body*

All drive systems offered by LEROY-SOMER are certified by INERIS which endorses their conformity by providing EC TYPE-EXAMINATION CERTIFICATES under the ATEX Directive 94/9/EC.

***INERIS**, control the risks, protect the environment*

Potentially explosive dusty atmospheres : LEROY-SOMER OPTIONS

CE MARKING : Extract from the 94/9/EC directive

Each device should carry a legible and indelible label with the following information:

- The name and address of the manufacturer,
- The mark (not necessary for components) followed by the number of the notified body involved in the production quality control phase, if applicable (category 2 zone 21),
- The batch or type designation,
- The serial number,
- The year of manufacture,
- The special mark indicating protection against explosions followed by the symbol for the product group and category,
- For group II, the letter G (concerning explosive atmospheres due to the presence of gas, vapour or spray), and/or:
- The letter D concerning explosive atmospheres due to the presence of dust,
- Any other information vital for safe operation.

Self-ignition temperature of dusts

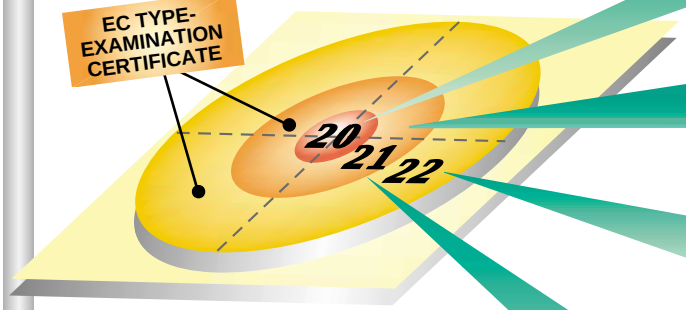
	Wheat	Barley	Sulphur	Sunflower (seed)	Aluminium magnesium	Aluminium flakes	Alfalfa	Malt	Sugar
Minimum flash point of a cloud of dust (°C)	420	450	190	490	430	600	460	400	350
Minimum flash point of a 5 mm layer of dust (°C)	200	205	220	220	480	400	210	250	220
Max. surface temperature	**125**	130	145	145	286	325	135	175	145

Max. surface temperature ≤ the lowest value of :
- *(2/3 flash point temperature for a cloud)*
- *and (flash point temperature for a layer – 75 °C).*

Example for wheat : *2/3 flash point temperature for a cloud = 280 °C and flash point temperature for a layer – 75 °C = 125 °C*

Surface temperature of equipment used in the presence of wheat ***≤ 125 °C.***

THE GLOBAL LEROY-SOMER OFFER



	No electric motors	ZONES
INDUCTION MOTORS *	LSPX / FLSPX **IP 6x** **Max. guaranteed surface temperature : 125 °C**	21
	LS / FLS **IP 5x** **Max. guaranteed surface temperature : 125 °C**	22
BRAKE MOTORS * ***Frame size 80 to 180***	LSPX / FLSPX FCR LSPX / FLSPX FAP LS / FLS FCR LS / FLS FAP	21 21 22 22
GEARED MOTORS or GEARBOXS ONLY *	COMPABLOC 3000 MANUBLOC 2000 ORTHOBLOC 2000 POULIBLOC 2000 MULTIBLOC 2000	21/22
VARIABLE SPEED DRIVES *	**LEROY-SOMER ranges of motors and geared motors are available in 2 versions :** **• Integrated drive : VARMECA** **• Drive in enclosure**	21/22

** For further information about LEROY-SOMER products, please refer to our specialist catalogues.*