

ATEX DIRECTIVE
2014/34/EU



ATEX MARKING FOR MINING

I M1 Ex ia I Ma

Table with 3 columns: Equipment Group, Equipment Category and Environment, Specific marking, Type of protection, Gas group, Temperature Class, Equipment Protection Level. Rows include details for Mining (I M1 Ex ia I Ma), Approved for Mining, 2 Levels of protection, 1 Level of protection, Explosion protection, Intrinsic safety level, Methane, n/a, and High, safe with 2 faults / high, safe with 1 fault.

EQUIPMENT MARKING OF PELI 3315Z0 LIGHT

CE mark (ATEX marking)

Explosion protection marking (ATEX marking)



II 1G Ex ia IIC T4 Ga
II 1D Ex ia IIIC T130°C Da
TRAC13ATEX0009X

APPROVED FOR USE WITH THREE SIZE 'AA' ALKALINE CELLS (DURACELL MN1500, PANASONIC AM-3BA/4B, OR SANYO SEC-ACAA) WARNING: DO NOT REPLACE BATTERIES WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT. DO NOT MIX CELLS FROM OTHER MANUFACTURERS. REPLACE ALL CELLS AT THE SAME TIME. RISK OF IGNITION-DO NOT OPEN IN HAZARDOUS AREA. SUBSTITUTIONS OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY. PELI™, TORRANCE, CA, USA

- B Ex marking for explosive Gas atmospheres
- C Ex marking for explosive Dust atmospheres
- D EC/EU type examination certificate number
- E General safety advises for safe use of the product

The ATEX markings in this document are just for illustration purpose only



EC/EU TYPE EXAMINATION CERTIFICATE NUMBER



TRAC

13

ATEX

0009

X

Notified body responsible for EC/EU-Type Examination (Test House)

Year Certificate Issued

ATEX Certificate

Serial Number

Certificate Number Suffix

X Suffix denotes special conditions of certification – refer to certificate. U Suffix denotes Ex component approval.

ATEX COMPLIANT BATTERIES

Hazardous location safety approvals for explosive areas, also affect the batteries that run the equipment. Different batteries might perform differently, so the ATEX certificate might be different as the tests deliver a different result (i.e. on Temperature Rating).

Therefore, it is very important to ONLY use batteries that have performed the tests to obtain the ATEX certificate.

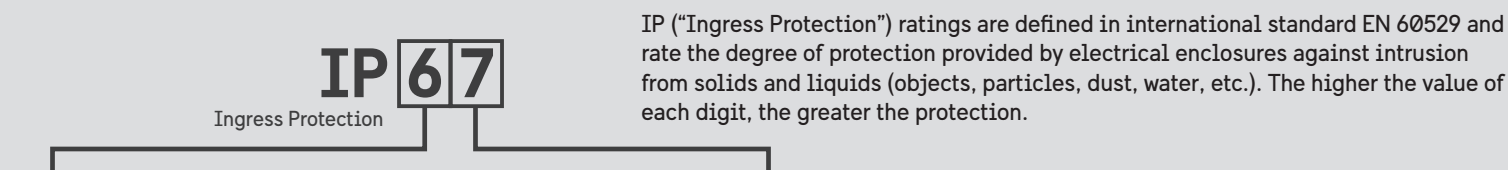
The use of any other batteries invalidate the Ex Certificate.



Table with 2 columns: BATTERY TYPE AA, TEMPERATURE CLASS. Rows include Panasonic LR44 (T4), Energizer LR44 (T6), Duracell LR44 (T6).

I.e. Approved batteries for Peli L1 1930 LED Zone 0 light

IP RATING CHART



ATEX ZONES AND CATEGORIES CLASSIFICATION

Potentially hazardous locations are divided into Zones:

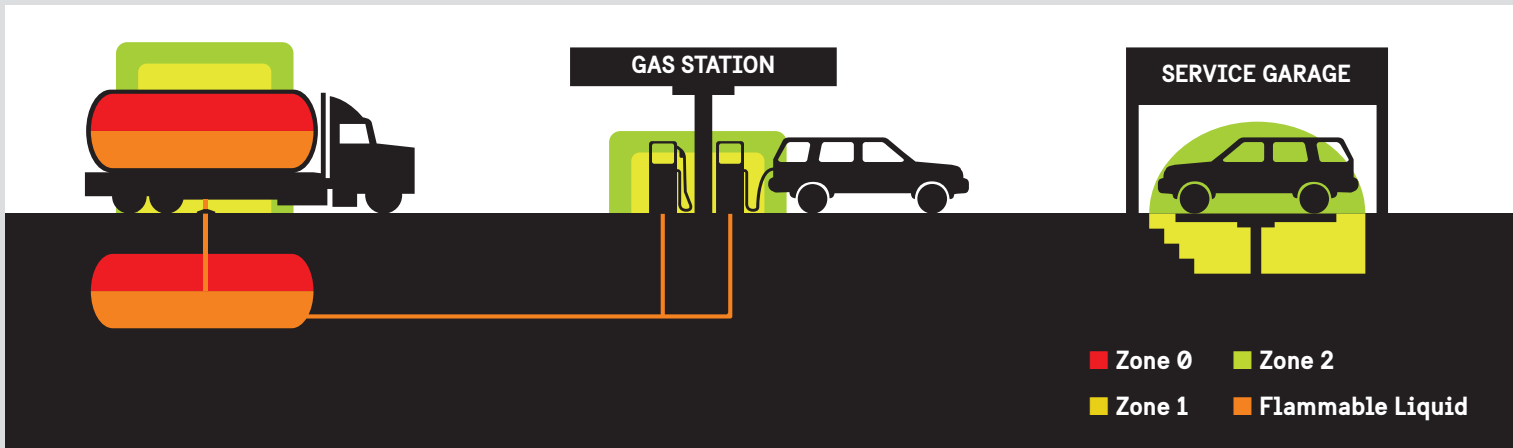
- 0, 1, 2 for Gas, Vapor, Mist
- 20, 21, 22 for Dust

Torches approved for usage in these zones are divided in Categories (1, 2, 3).

Table with 4 columns: PRODUCT, Category 1, Category 2, Category 3. Rows include USER ZONE (Zone 0 / 20, Zone 1 / 21, Zone 2 / 22), Zone Criteria, Hazard, and Approved categories.

Above criteria is only a rough guidance. A local, authorised supervisor should decide the ATEX Category for each Zone after strict evaluation and should decide which safety equipment is required.

GAS ENVIRONMENT



GAS

GAS GROUP

Gases are divided into two groups based on the LEL and UEL values.

Ex II 1G ia IIC T4 Ga

Typical Equipment Marking for Gas Atmospheres

Table with 5 columns: INDUSTRY, GAS GROUP, SUBSTANCE, MIE MINIMUM IGNITION ENERGY, SELECTION OF EQUIPMENT. Rows include Mining industry Group I (I, Methane, 200 µJ) and Surface industry Groupe II (IIA, Propane, 180 µJ; IIB, Ethylene, 60 µJ; IIC, Hydrogen, 20 µJ).



DUST

DUST GROUP

Dust areas are defined as group III and refers to equipment intended for use in spaces with an explosive dust atmosphere other than mines susceptible to firedamp.

Ex II 1 D ia IIIC T130° C Da

Typical Equipment Marking for Gas Atmospheres

Table with 4 columns: DUST GROUP, SUBSTANCE, SELECTION OF EQUIPMENT, EXAMPLES. Rows include IIIA (Flammable fibers), IIB (Non-conductive dust), and IIC (Conductive dust).

MAXIMUM SURFACE TEMPERATURE

Group III electrical equipment is marked with a temperature with 'T' prefix detailing the actual maximum temperature that may be found on any surface accessible by a potentially explosive dust atmosphere. Ignition temperature of a specific dust hazard must be higher than maximum surface temperature displayed on electrical equipment.

IGNITION TEMPERATURES FOR COMMON COMBUSTIBLE DUSTS

Table with 4 columns: DUST TYPE, DUST GROUP, DUST LAYER (5MM) MINIMUM IGNITION TEMPERATURE (°C), DUST CLOUD MINIMUM IGNITION TEMPERATURE (°C). Rows include Aluminum, Coal, Flour (Wheat), Grain, Iron Powder, Paper Fibre, PVC, Resin (Epoxy), Rubber, Soot, Starch (Maize), Sugar, and Wood (Flour).

TEMPERATURE CLASS

- The Auto-Ignition Temperature is the temperature, in °C, at which a gas will ignite spontaneously without another source of ignition.
- Because there is NO correlation between Ignition Energy and Ignition Temperature for the gas groupings, a temperature code was established.
- The Temperature Class is based on use in an ambient temperature of -20°/40°C (no need to be shown). If the ambient temperature differs from that range, it needs to be shown.

Ex II 1G ia IIC T4 Ga

Table with 3 columns: TEMPERATURE CLASS, IGNITION TEMPERATURE, EXAMPLES. Rows include T1 (≥ 450°C), T2 (≥ 300°C), T3 (≥ 200°C), T4 (≥ 135°C), T5 (≥ 100°C), and T6 (≥ 85°C).

US UL FM VERSUS EUROPEAN CE Ex CLASSIFICATION

Table with 5 columns: SUBSTANCE, TYPICAL ENVIRONMENTS, US CLASSIFICATIONS, EUROPEAN CLASSIFICATION, VOLATILITY*. Rows include Class I (Flammable Gases), Class II (Combustible Dusts), and Class III (Ignitable Fibers).

* A torch certified to Category 1 (Zone 0) is safe for use in areas rated Category 2 (Zone 1) and Category 3 (Zone 2). Conversely the opposite is not possible. This information should be taken only as a guideline. Contact us for specific details on both, US and European Directives.

DIRECTIVE 2014/34/EU



The ATEX Directive is a Directive adopted by the EU for products intended for use in Potentially Explosive Atmospheres. ATEX Directive 1994/9/EC became mandatory for manufacturers and end users on the 1st of July 2003. The new Directive, 2014/34/EU, was released on the 26th of February 2014 and has been applicable since the 20th of April 2016.

The ATEX Directive 2014/34/EU regulates that manufacturers are forced to supply properly certified electrical equipment to be used in potentially explosive areas. From the workers side there is another ATEX Directive (1999/92/EC) that regulates the requirements for improving the safety and health protection of workers, of the potential risk from explosive atmospheres. Both Directives are mandatory.

These Directives state that each area needs to be classified according to the potential hazardous risk so that only appropriate certified equipment can be used there. With the old CENELEC (previous Directive), different areas were divided into three classifications: Zone 2, Zone 1, and Zone 0 depending on the level of risk. With the ATEX Directive, every Zone is associated to a Category, and every electrical equipment is classified according to these categories, certifying in which areas it can be safely used.

Under the reviewed ATEX Directive for Zone 0 & 1 areas, the standard EN 60079-0:2012 came into effect in April 2015. The most significant change was the need to mould in anti-static material or apply anti-static coating to the products in order to successfully pass the strict ATEX test.