**ATEX Approval and LPD Trade ESD/Non Sparking Workplace Tools**

**Introduction:**

The European ATEX (**AT**mospheres **EX**plosibles) Directives were first proposed in 1994, and the latest editions came into force across the European Union (EU) and European Economic Area (EEA) in 2014. The directives describe the minimum safety requirements for workplaces and equipment used in potentially explosive (hazardous) atmospheres.

There are two ATEX Directives (one for the manufacturer and one for the user of the equipment):

- The ATEX 114 "equipment" Directive 2014/34/EU - Equipment and protective systems intended for use in potentially explosive atmospheres
- The ATEX 153 "workplace" Directive 1999/92/EC - Minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres.

As well as improving workplace safety, the chief aim of the directives is to reduce barriers to trade by enabling equipment to be lawfully placed on the market by suppliers and used by customers anywhere within the EU & EEA, without requiring separate testing, documentation and certification in any particular member state. The regulations apply to all equipment, products and devices intended for use in explosive atmospheres, whether electrical or mechanical, including protective systems. Manufacturers who apply its provisions and affix the applicable CE and Ex marking are able to sell their equipment anywhere within the EU and EEA without any further requirements with respect to the risks covered being applied. Although primarily addressing EU/EEA member states, products certified as complying with ATEX directives are also exported to other non-EU European Countries, as well as North & South American and Asian countries. Following the “Brexit” referendum and the United Kingdom’s withdrawal from the EU/EEA trading zone, a new conformity mark (UKCA) has been proposed for the UK, however this is yet to become a legal requirement and in the meantime many manufacturers continue to certify their products according to the ATEX Directives.

The classification, marking, test standards and conformity requirements for products according to ATEX can be a complex process – more detailed information is available from the link included in the appendix (i). It should also be noted that as well as the ATEX 114 Equipment Directive which applies principally to manufacturers and suppliers, the ATEX 153 Workplace Directive places legal requirements on organisations with business operations in potentially explosive atmospheres, designed to improve worker safety and health.

**Implications for LPD ESD/Non-Sparking Workplace Safety Tools**

In very broad terms, there are three preconditions necessary for the directive to apply: the equipment must (a) have its own effective source of ignition, (b) be intended for use in a potentially explosive atmosphere (air mixtures), and (c) be under normal atmospheric conditions.

LPD Trade's customers are chiefly divided into two categories:

1. Static Sensitive Working Environments where uncontrolled discharge may cause damage to components during production, handling and storage (typically electronics and related industries).
2. Hazardous Area Working Environments where uncontrolled static discharge may cause ignition of flammable gases/vapours and combustible dust atmospheres (typically petrochemical/processing industries).

Customers in group 1 would not normally be expected to encounter explosive atmospheres, however, operations taking place within group 2 clearly fall within that category. **Therefore the critical question to be addressed is "does the equipment have it's own effective ignition source"?**

Clearly, LPD products are "passive" items that do not incorporate electrical circuits, or have mechanical moving parts, both of which could generate an ignition source and therefore require some level of official third party assessment to gain ATEX conformity. Moreover, the main design criteria of the product range is that the materials of construction are "conductive" or "static dissipative", to the extent that ignition hazards from uncontrolled static discharge are mitigated or eliminated. However some manufacturers of similar passive products, intended for use in hazardous areas, have taken the view that for clarity in terms of sales and marketing and customer reassurance and acceptance, have sought additional validation and expert assessment to back up their claims of hazardous area safety. In the case of non-electrical equipment the applicable international standard for assessment and compliance is ISO 80079-36:2016: Edition 1.0 - "Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements".

The route to gaining the necessary documentation for approval is shown on the following flow chart (fig. 1 – courtesy of CSA Group). For a full explanation, the entire document is also attached in the appendix (ii). By following the chart, we can assume that LPD Workplace Tools are commonly used in Group II applications (Industrial settings other than below ground mining applications), and in hazardous areas where an explosible or combustible atmosphere is likely to occur during normal operating conditions (Zone 1 or 21), or is possible under fault or abnormal conditions (Zone 2 or 22).

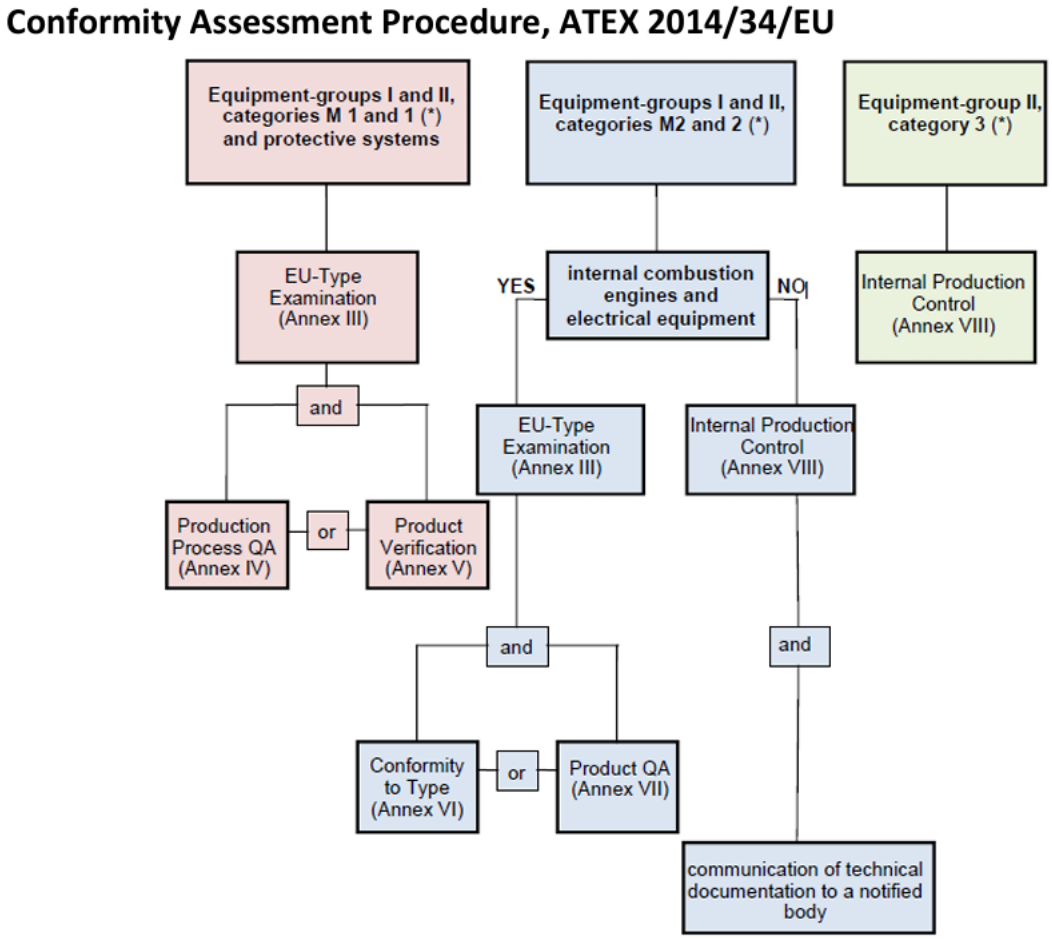


Fig 1 – Routes to ATEX compliance (CSA Group).

Since there are no moving parts or inherent energy sources contained within LPD Products, this suggests that the most appropriate route to compliance is via the Equipment Group II; Category 3 route, which indicates that the product provides the necessary degree of protection in normal operation. While this does not necessarily need external assessment by an EU Notified Body (Test Laboratory), it will however require "Internal Control of Production" in which a technical file is compiled for each product or group of similar products. The technical file will contain such documents as (but not necessarily limited to):

- Product description, design and manufacturing drawings
- Potential ignition hazard assessment
- Any test data and reports supporting constructional safety
- Listing of any relevant standards applied
- Any special instructions for safe usage of the products
- The actual declaration of conformity

## Conclusions

1. The ATEX Equipment Directive, whilst essentially designed to improve safety for workers and the wider environment, is fundamentally concerned with "levelling the playing field" to encourage free trade across the European Economic Area.
2. The ATEX Equipment Directive applies to all products placed on the market for use within hazardous/potentially explosive atmospheres, including electrical, and non-electrical/mechanical equipment and protective systems.
3. Owing to their materials of construction, LPD ESD/Non-Sparking Workplace Tools would appear to fall within Category 3 products – meaning that they afford the necessary degree of safety in normal operation. LPD has already carried out product testing to several ESD related standards, and has test data available.
4. If (3) is taken to be correct, the requirements for using the products within Group II areas can be achieved via the Internal Control of Production route to compliance.
5. This will involve compiling a technical file for each product or group of similar products which will be retained, in addition to a declaration of conformity which may be shared with the customer. This can be carried out internally by the manufacturer, however in some cases third party Notified Bodies may be employed to assist with the process (and no doubt enhance the credibility of the final result).
6. Additional requirements may include product marking (EX and CE), as well as issuing instructions for safe use of the products.
7. Despite all the foregoing, the need for gaining ATEX compliance for LPD Products is not clear-cut, and will inevitably come down to a matter of opinion, and the consequences of pursuing this should be weighed against the costs and benefits. Refer also to appendix iii) – ATEX Borderline Product List.

**If a strong case can be made for ATEX compliance in the face of customer requests and to gain competitive advantage, qualified advice should be sought to navigate the most effective way to achieve this.**

## Appendices

i) Link to Bartec - https://bartec.com/bartec-academy/explosion-protection-information
ii) CSA Form 9227 – Non Electrical Equipment in Hazardous Areas (PDF)
iii) Borderline List – ATEX Products (PDF)
iv) Link to 5th edition of the ATEX 2014/34/EU Guidelines - https://ec.europa.eu/docsroom/documents/59156
v) Sample IECEX Product Test Report (Newson Gale Equipotential Bonding Clamps) (PDF)