

The Evolution of the Standards



We are all familiar with the standards that are used in the chemical and pharmaceutical processing industries. These include market harmonisation standards such as ATEX and Codes of practice like CLC/TR 50404 (Europe) and NFPA77 (USA) for guidance on controlling static electricity.

It is interesting to consider just how long ago people first tried to use standardisation and the reasons behind it. One of the earliest examples is the creation of a calendar: ancient civilisations relied upon the apparent motion of the sun, moon and stars to determine the times to plant and harvest crops and celebrate festivals.

Calendars similar to our own, with a 365 day year have been in existence for over 5000 years.



Trade has often been the trigger for creating standards. The 12th century English King Henry I instituted the "ell" a measurement equivalent to the length of his arm. This was used when trading cloth, etc. Some find it puzzling that the UK has the Pound as the basic monetary unit as well as the unit for weight. It is believed that this comes from medieval times, when the penny was in the form of a small silver coin with a star

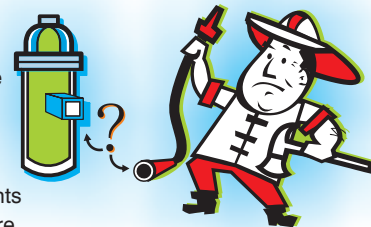
symbol on it, sometimes known as a starling. 240 of these weighed one pound in weight: "one pound of starlings" or today "a pound sterling". Until British decimalisation in the early 1970's, one pound sterling still consisted of 240 pence.



During the Industrial Revolution, the demand for goods led eventually to rail networks being established across many countries. Often, different rail companies, operating in various areas, had their own gauge of track. This meant that goods could not be transported across the country on one train, owing to the incompatibility of wheel and track width. When the American Transcontinental Railroad was commenced in the 1860's, a standard track width was used, which later became the US standard.

In 1904, a major fire broke out in Baltimore, USA, which soon engulfed a large part of the city. Fire fighting units were called in from several surrounding states.

Unfortunately, the hoses of these reinforcements did not fit the hydrants in Baltimore and the fire fighters were helpless as the fire destroyed over 2,500 buildings.



This incident resulted in uniformity of fire safety equipment across the States. The National Fire Protection Agency, or NFPA is the body that produces the current US electro-static control guidelines mentioned above (NFPA77).

In Europe, it is advisable for companies to consult the Code of practice CLC/TR 50404 for static control advice. This document has been developed over a number of years and large parts are based on the well-respected British Standard 5958. Although some local standards are still promoted, such as the German BGR, illogical differences may lead to confusion, particularly when the international nature of many chemical and pharmaceutical companies is considered.

Today, those working in the hazardous area (Ex) industries can look to ATEX marking (Europe) and FM / UL Listing (US) for the assurance that equipment purchased conforms to the relevant standards of safety and compliance. The final deadline for companies to ensure that risk assessments under ATEX are complete and (where applicable) equipment conforms to ATEX, is 30th June 2006.

The authors wish to acknowledge the article "Through History with Standards" and its references (ansi.org website of the American National Standards Institute) for much of the information used in this feature.

A Brief Look at Static-Dissipative Flooring and Footwear

Our recent development of a mains-powered static-dissipative footwear tester has brought back into focus the importance of two factors:

1. Know your footwear standard

Static-dissipative footwear as used in the Hazardous Area (Ex) industries differs from that used in the electronics industry. Therefore it is important to use a tester calibrated to the same standard as the footwear. This is also true of differing standards within the Ex industries; for example, it is inappropriate to use a footwear tester calibrated to the local BGR (Germany) or British Standards, if the footwear in use or available is manufactured to the pan-European EN345 standard (recently renamed: EN ISO 20 345).

2. Ensure that the floor is static-dissipative

There is a common misconception that if a person is wearing static-dissipative footwear, that they cannot become electro-statically charged. This is only partially true: in order for the footwear to be effective, the flooring in the Ex area must also be static-dissipative. This can be achieved in a number of ways: for example, bare concrete is normally static-dissipative in its own right (but beware: many static-dissipative concrete floors have been rendered ineffective by being painted with insulating coatings!).

The next issue of **Ear To The Ground** will consider the issues of **static-dissipative flooring** in much more detail.



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