

EN54-24

Fire detection and fire alarm systems

> Components of voice alarm systems

> Loudspeakers

How will this standard affect you?

Q When does it come into effect?

A EN54 Part 24 comes into effect in APRIL 2011. Companies waiting to see if the standard will have an effect on their business will see that "IT WILL AFFECT THEM". The regulatory requirements for fire products are very strict and rigorous and no one in this industry is going to ignore the fact that speakers should comply with EN54-24 regulations, when used in a fire alarm system.

Q Where and when will EN54-24 certified loudspeakers need to be used?

A In the UK Standard BS5839 part 8; code of practice for the design and installation and servicing of voice alarm systems, it states that in buildings designed to accommodate the general public in large numbers, multiple loudspeaker circuits should be provided in any un-compartmented public spaces of such buildings if the space is either:

a) Greater than 4,000m² in area; or

b) Designed to accommodate more than 500 members of the public.

Other European countries may have different criteria, stating where and when EN54-24 loudspeakers are to be used.

Q Will all speakers supplied for projects after April 2011 have to be certified?

A In most countries, yes, however speakers already sold and installed will not be subject to this standard. Products manufactured and delivered to the customer before the transition date will also not be subject to this standard.

Q How will EN54 compliance and certification be policed?

A There are several ways enforcement is carried out in the UK. Trading Standards have the authority to enter the manufacturing company and look at CE marking evidence and they also can remove products from the market to inspect and test. Trading Standards activities are mainly driven by complaints. There is the Health and Safety Executive (HSE) who would be involved should there be an accident on site but mostly it is driven by procurement contracts such as those for the Olympics which will specify the latest requirements. It is highly recommended companies comply before selling products.

All European Countries have similar enforcement authorities too numerous to mention individually.

Q What effect will the standard have on speaker choice?

A It is expected that loudspeaker choice for Acoustic Consultants will be significantly reduced due to the high cost of certification, with many manufacturers waiting to see how it is accepted in the market before taking the inevitable step themselves.

Q Is it a recommendation or a legal requirement?

A This is a legal requirement for 24 out of the 27 member states of the European Community (see list below). Anyone offering non-certified product for use in Voice Alarm systems will be breaking the regulatory requirements and will be open to prosecution.

At present it will be a legal requirement in most EU countries with the exception of the UK, Ireland and Sweden who have not made the CPD (Construction Product Directive) mandatory yet. However, these countries are actively looking at implementation by 2012.

Q Do EN54-24 compliant speakers have to be used on all projects?

A Compliant speakers are required for use in Voice Alarm systems under the use of the following standards: BS5839 Part 8, ISO 7240 Parts 16 & 24. Other standards covering Sports and Stadia are currently under review and are likely to also be cross referenced with EN54 Part 24.

EN54-16:2008 requires speakers within the Voice Alarm Control Indicating Equipment (VACIE) to be compliant with EN54-24

Q What is the penalty for fitting a non certified system?

A Typically under EU Directives each member state has the power to enforce withdrawal from sale or even issue a recall notice on dangerous or non compliant products, there is a mechanism where this recall can be triggered across all EU members. There are also monetary fines which vary in EU countries but these are small compared to the cost of a product recall especially if they have been installed.

Q Will EN54 compliant speakers cost more?

A Yes they will.

Q Why will the standard in itself increase costs?

A Due to the more demanding tests, higher specified raw materials are being used to meet higher standards so inevitably loudspeakers will cost more.

Q How does EN54-24 link to ISO9000 Quality Standard?

A The CPD is a European Directive for CE marking and these directives have different ongoing production control requirements. For example, the LVD (Low Voltage Directive) does not require any factory visits but for fire safety equipment a Notified Body must visit the factory to ensure FPC (Factory Production Control). This is similar to ISO9000 and having ISO9000 will help in achieving FPC under the directive but will still require a Notified Body to visit the factory.

Q What tests (in brief) are required of the loudspeakers to meet the new standard?

A Acoustical measurements:

▶ Frequency response, horizontal and vertical coverage angles, maximum sound pressure levels, rated noise power, rated Impedance.

A Durability:

▶ Dry heat (operational), dry heat (endurance), cold (operational), damp heat, cyclic. (Operational), damp heat steady state (endurance), damp heat cyclic (endurance), shock. (Operational), impact (operational), vibration sinusoidal (operational), vibration sinusoidal. (Endurance) and sulphur dioxides (SO₂) corrosion (endurance) test.

▶ The flammability of any plastic materials being used.

▶ The protection of internal speakers type "A" in the standard to IP21C.

▶ The protection of external speakers type "B" in the standard to IP33C.

Q What countries are affected?

A This is a European standard and is mandatory in all the European countries listed below:

Austria - Belgium - Bulgaria - Cyprus - Czech Republic - Denmark - Estonia - Finland - France - Germany - Greece - Hungary - Ireland - Italy - Latvia - Lithuania - Luxembourg - Malta - Netherlands - Poland - Portugal - Romania - Slovakia - Slovenia - Spain - Sweden and the United Kingdom.

Note: Not all the above countries have fully implemented the CPD although most contracts within these countries also require compliance to the latest standards.

Note: Because EN54 has been cross referenced with ISO7240 and this is an international standard many other countries not mentioned may also be covered.

Q What will the benefits be?

A (i) Having a harmonized quality standard across Europe for voice alarm systems equal to that used by the fire alarm industry will be enormous. Confidence will be gained by all, including the insurance industry.

(ii) That the product will be reliable monitored and fit for purpose.

(iii) The product will provide minimum performance criteria which system designers can rely on.

(iv) Loudspeakers from different manufacturers can be assessed on a like for like basis, on quality and performance.

Q Is there or will there be any link between EN54 and the American UL certification?

A There is virtually no difference between the EN54-24 and the ISO 7240-24 standard; however US standards are a very different structure mainly concerned with electrical safety.

NOTE: Penton have taken the step to embrace EN54-24 and will have a full range of speakers that are individually certified, fit for purpose and manufactured to a high standard of quality, ensuring the best possible design can be achieved for each project. This will mean that any system employing the use of our certified product will offer the best possible protection of life in the event of an incident.



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