Are you ready for EN 54-23?

New requirements for fire alarm systems from 1 January 2014

Pfannenberg
ELECTRO-TECHNOLOGY FOR INDUSTRY

At a glance:

What you should know about EN 54-23
What has to be done now
How Pfannenberg supports you

From 1 January 2014 onwards, fire alarm systems must have, according to EN 54, visual and/or visual-audible signaling devices which comply with EN 54-23 requirements.

That means that all visual alarm devices (VADs) which do not have the necessary certification will also lose their national approval (e.g. VdS) and may no longer be used for new installations.

There is therefore an acute need for action for the following groups of companies and professionals: planners/specifiers, fire detection technology experts, system integrators and manufacturers of fire alarm systems, electrical installers and specialist companies as well as building operators in all countries in the EU.

Pfannenberg is the first manufacturer to now offer you flashing lights that are EN 54-23 and VdS certified. That ensures you planning security for all building projects.

Background information:
EN 54-23 – a directive becomes a regulation

Up until May 2010 there was no unified European standard to define the performance of visual alarms. The introduction of the European standard **EN 54-23** now allows standardisation of the requirements for visual alarms, the test methods and the performance criteria.

With the EN 54-23 taking effect, demands are also being **made regarding** the **light output** and **light distribution** for all visual signaling devices. Furthermore, in many cases of alarms in which up to now solely an audible signal has been installed, an **additional visual signal must** be used in the future.

So, ambient noise, so-called acoustic smog, the use of ear protection or headphones and deafness hinder the perceptibility of audible danger signals and make **additional visual alarm devices in fire alarm systems urgently necessary.**

For this reason, certified visual and/or **visual/audible signaling** devices are **mandatory** in accordance with **EN 54-23** as of **1 January 2014,** as the transitional period expires on this date.

In countries, such as Great Britain, Portugal, Ireland and Sweden, which have currently not implemented European Directive 89/106/EEC (Construction Products Directive) for the CE conformity declaration of visual and audible alarms, the deadline is 1 July 2013. Thereafter, European legislation allows no choice. The Construction Products Directive will be superceded by the Construction Products Regulation and becomes EU-wide law.

Because of the EN 54-23 all visual signaling devices will lose their certifications as of 1 January 2014 and may no longer be used for new installations.

The Details:
What requirements does EN 54-23 stipulate?

The EN 54-23 European product standard stipulates the device requirements for visual signaling devices used as components of fire alarm systems. Many of the visual signaling devices previously used in fire protection do not meet the EN 54-23 requirements. Besides the signaling devices all other components of a fire alarm system have to comply with the EN 54 series of standards. Furthermore, according to EN 54-13 an evaluation of the compatibility of system components has to be performed in which the visual signaling devices are also considered.

Requirements for visual signaling devices

Illumination: An illumination of min. 0.4 lux (lm/m²) is required over the entire coverage volume, i.e. the space in which the alarm signal is to be effective (e.g. hotel room).
Light color: The visual signaling device must emit white or red flashing light.
Flash rate: The flash rate must be between 0.5 Hz and 2 Hz.

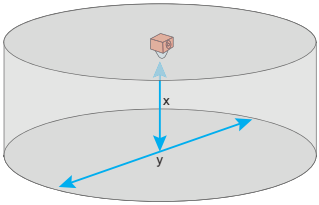
The Details:
What requirements does EN 54-23 stipulate?

Coverage Volume

Visual alarm devices must meet the requirements for the coverage volume in at least one of the following three categories: ceiling mounted signaling device **C**; wall mounted signaling device **W**; or **O** for signaling devices for which the mounting position is freely selectable.

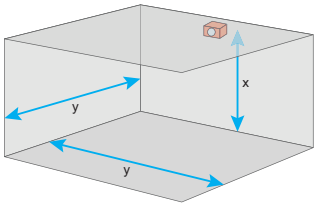
Ceiling mounted (C)

Devices from category C are described with the specification C-x-y. “x” stands for the measured maximum installation height in meters (m) at which the signaling device may be placed. Whereas “y” specifies the diameter of the cylindrical coverage volume. Besides the specification of the cylindrical signaling space the devices are only classified for heights up to 3 to 6 or up to 9 m.



Wall mounted (W)

Category W devices are described with W-x-y. “x” stands for the maximum height of the signaling device on the wall specified in meters (m) with a minimum installation height of 2.4 m. “y” describes the square base area of the cuboid coverage volume.



Open mounting position (O)

For category O devices the shape of the coverage volume and the mounting position of the signaling device is **open**. This means there are **no restrictions** on the formation of the coverage volume.

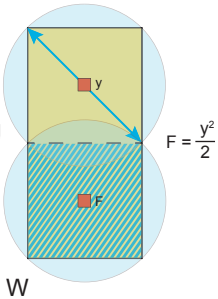
Conclusion:

Category O devices are the most flexible solution

The signaling device can be optionally mounted on the ceiling, wall or another position, whereas category C and W devices are only allowed to be mounted according to their classification.

Category O devices are the most economical solution

- Only one signaling device is required for all mounting positions. This avoids having to keep double stock.
- No restriction with the mounting height - devices with the identifier C-3-y are not approved for ceiling heights of 3.2 m for example and a device of category C-6-y has to be taken, which would be far too oversized for this application.
- The shape of a cylinder is generally not compatible with the shape of rooms. The actual coverage volume of the device is firstly reduced to a cylinder shape. In order to then be in a position to use the shape of the cylinder and to make planning possible, it is necessary to further reduce the coverage volume to the largest possible quadratic area. This automatically requires the use of a larger number of signaling devices in order to ensure alarming of the room.



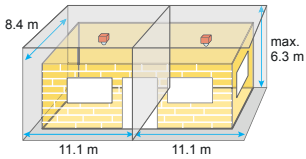
- The shape requirement with quadratic base area for category W devices means that the actual coverage volume that the device could cover is reduces in certain places. As a result of the artificially reduced coverage volume, an increased number of devices is necessary.
- Category O devices are subject to no restrictions, so the formation of the largest possible coverage volume in the form of a freely selectable cuboid is possible.

Application example

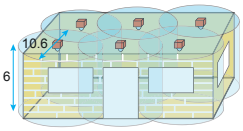
As an example, a room of 20 m length, 8 m width and 3 m height is to be signalled. Planning with the following three devices is compared:

- The Pfannenberg PYRA flashing light (category O) with the following coverage volume 11.1 m x 8.4 m x 6.3 m
- The same device, however if it were only approved for ceiling-mounting. Coverage volume C-6-10.6.
- A comparable device of category C-3-7.5

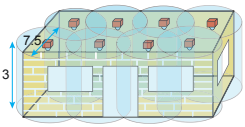
On account of the specified coverage volumes, the following quantities for visual signaling devices arise:



PYRA
(Cat. O) 11.1 x 8.4 m



PYRA
(Cat. C) C-6-10.6



VADs for ceiling mounted position
(Cat. C) C-3-7.5

The following calculation applies for this example:

Calculation* of "open mounted" in comparison to ceiling mounted position				
		PYRA (Cat. O)	**PYRA (Cat. C)**	**C-3-7,5 (Cat. C)**
Quantity	unit	2	6	8
Costs per unit	EUR	60.00	60.00	60.00
Total cost of devices	EUR	120.00	360.00	480.00
Costs of cabling per unit	EUR	9.00	9.00	9.00
Total costs of cabling	EUR	18.00	54.00	72.00
Costs of installation per unit	EUR	1.50	1.50	3.00
Total costs of installation	EUR	3.00	9.00	24.00
Total costs	**EUR**	**141.00**	**423.00**	**576.00**
Cost saving compared to C-3-7,5	**EUR**	**435.00**	**153.00**	

*exemplary calculations costs; costs for a room 20 m of length, 8 m of width, 3 m of height

If the ceiling height of the room were just 1 cm higher, the 3rd version could not be used for this room.

Need for action:
What does EN 54-23 mean for you in particular?

The Europe-wide introduction of the unified product standard for visual alarms affects a whole range of companies and professional groups and has to be considered in all current and future projects:

Planners and specifiers

- Modification of the contractual basis
- Modification of the tendering text / items
- Information for the ordering customer
- Testing and acceptance of the visual signaling device

Fire detection technology experts

- Define the basis for testing/demand for certificates
- Testing the function of the visual signaling device and comparison with the standards requirements

System integrators / Manufacturers of fire alarm systems

- Implementation of EN 54-23 approved visual signaling devices in the system
- Assessment of compatibility in consideration to EN 54-13 of the entire system

Installers and specialist companies

- Information for the ordering customer
- Modification of the offers
- Possibly inform on erroneous items in the tender, possibly revision

Building operators

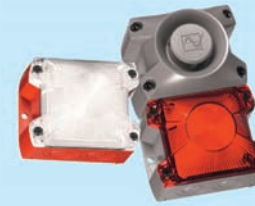
- Review of the contractual documents
- Information to the planning company

Certified Pfannenberg products
for building and industrial solutions

EN 54-23 certified solutions from the innovative PATROL and PYRA series

PY X-S-05

PA X 1-05



PY X-S-05 and PA X 1-05

reddot design award
winner 2013

Flashing sounders PAX from the PATROL series had been honoured with the red dot award: product design 2013.

Safely to the right solution:
Pfannenberg Sizing Software (PSS)

With the Pfannenberg Sizing Software you can determine standard-compliant signal technology solutions. Calculate correctly and avoid expensive and hazardous oversizing and undersizing. With PSS and innovative products from Pfannenberg you will always find the best and most efficient solution for your applications. Please find more information on our website: www.pfannenberg.com/en/support/pss-sizing-software/

The recommendation:
Take advantage of certified VADs now!

What are the advantages of EN 54-23 certified VADs?

- Planning reliability in project management
- Ensuring compliant fire alarm systems
- Minimisation of liability risks
- Cost reductions thanks to shorter installation times
- For system integrators and manufacturers of fire alarm systems: Reliability concerning system requirements and compatibility
- For building operators: possibly a reduction in insurance premium

Certified flashing lights from Pfannenberg

Pfannenberg offers you flashing lights certified according to **EN 54-23** and national approval (e.g. VdS). The **flashing light PY X-S-05** and the combined **visual-audible device PA X 1-05** are available in the standardized lens colors red and clear and ensure an immediate **planning security for all building projects.**

Get fit for EN 54-23
contact us now

Please find more information on:
www.EN54-23.eu

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