IZMIR

Mike Stonehouse

The power behind **your mission**

Johnson Controls

Mike Stonehouse – Johnson controls

Fire Industry association UK FD&A council member

20 years plus experience in the UK Fire Industry

Working across UK, Ireland, Europe and Africa bringing a wealth of regional experiences

Our objective

is to promote, improve and perfect fire protection methods, devices, services and apparatus

UK Fire Industry expectations

UK Fire Alarm companies are 3rd Party certified

Fire systems need to meet the requirements of building standards BS9999 or BS 9991, system over a certain size have to be notified to local building control

It is normal to use certified companies for Fire installation, Design, Installation, Commissioning, Maintenance.

The following standards apply to Fire System installations

- Designed and tested to
- BS5839-1 Commercial Buildings, none residential
- BS5839-6 Domestic dwellings

BS7273 covers the control of interfaces

- There are 1-6 parts e.g. part 4 cat A is control of doors

BS7671 IEE British Electrical wiring regulations

- 18th Edition

EN54 equipment standards

Product Standards

EN54– What does it mean?

- The **EN 54 Fire detection and fire alarm systems** is a mandatory standard that specifies requirements and laboratory test for every component of fire detection and fire alarm system and it allows the free movement of construction products between countries of the European Union market.

- This standard is widely recognized around the world for several countries outside of European Union. It is recognized in Latin American countries, Brazil, African and Asian countries and several islands in the Pacific Ocean.

- The Standard Includes the below and more:

- Panels – Part 2
- Sounders– Part 3
- PSU – Part 4
- Optical Detectors – Part 7
- System Approval – Part 13
- Visual Alarm Devices – Part 23

Product Standards

Approval certificates can come from many test houses but they still comply….

So what's the difference?

Explanation:

Essentially all test houses are 3rd party businesses (not linked in any way to the manufacturer) that evaluate products (ideally before release), and do so according to the relevant test criteria set out in EN54.
Fundamentally all that you need request is that the product is 3rd party certified to the EN54 standard.

Some well known examples:

CPR – Construction products regulation. Replaced the CE mark in many cases and tests that that products are fit for purpose. In the past a manufacturer could self certify CE, this is no longer the case.
BRE - Popular in the UK market.
VDS – German based business that is well known in the German region and even specified in the local German Market.
LPCB – Popular in the UK market. Well known for their little red book.
UL – American focused approvals but well known across EMEA.

BS5839 – What does it mean?

- BS 5839-1: 2017 provides recommendations for the planning, design, installation, commissioning and maintenance of fire detection and fire alarm systems in and around non-domestic buildings. It does not recommend whether or not a fire detection and fire alarm system should be installed in any given premises.

- The term fire detection and fire alarm systems, in the context of BS 5839-1:2017, includes systems that range from those comprising only one or two manual call points and sounders to complex networked systems that incorporate a large number of automatic fire detectors, manual call points and sounders, connected to numerous inter-communicating control and indicating panels.

- The term also includes systems that are capable of providing signals to initiate the operation of other fire protection systems and equipment (such as fire extinguishing systems, smoke control systems or automatic door release equipment) or safety measures (such as shutdown of air handling systems, closing of oil or gas valves or grounding of lifts).

Installer Standards

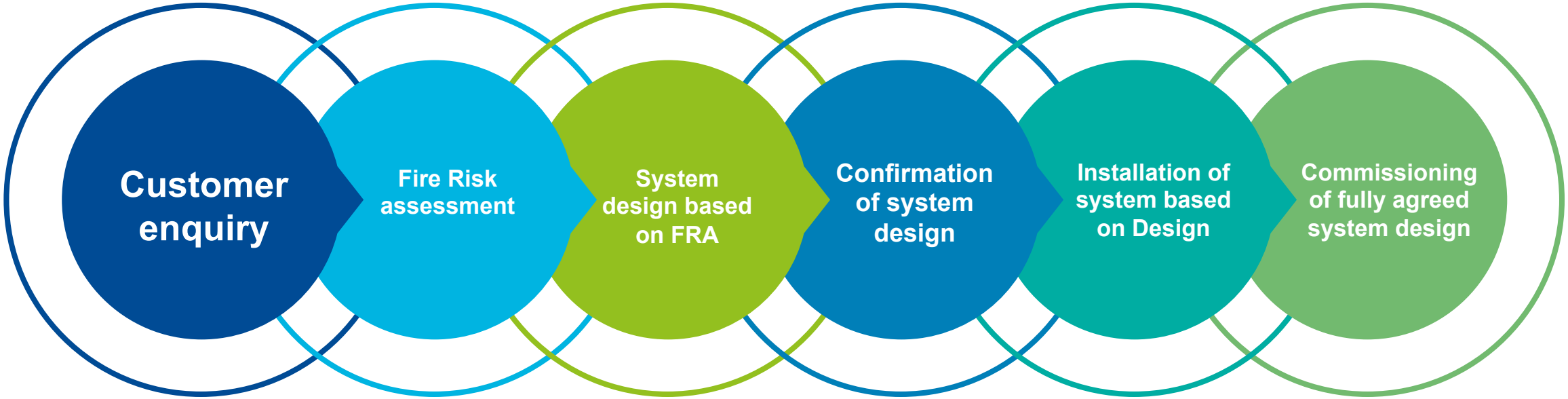
BAFE / LPS / NSI – Are these important to you?

The above groups are audit businesses, that visit installers and check the quality, consistency and professionalism of the installer.

It is good practise to ask any installer, or service company (you intend to work with or specify) if they take part in a 3rd party audit programme.

You will also hear of FPA and FIA. It is important to remember that anyone can join this as it is an Industry group, not an examination body. They do offer educational and training courses to anyone e.g. on BS5839 etc. so is worth familiarising yourself with their offering.

Process Outline



Competition - Handover

- As wired drawings marked up
- Decibel readings noted on drawings
- Zone diagram marked up
- Training given to system users
- Special notes made on areas

- Operating and Maintenance manual produced, including,
- As fitted and wired drawings finished.
- Instruction manual for equipment,
- Data sheets for products
- Servicing details
- Mains supply locations
- Signalling details

- Maintenance company chosen
- Maintenance schedule prepared
- One zone per visit
- 25% per visit
- Sounder test
- Weekly Test (User)
- Battery checks to comply BS5839-1

BS5839-1 Other regions other than UK

South Africa use a stronger responsibility on the individual with SAQCC and Sans 10139:2012, which follows the BS5839-1

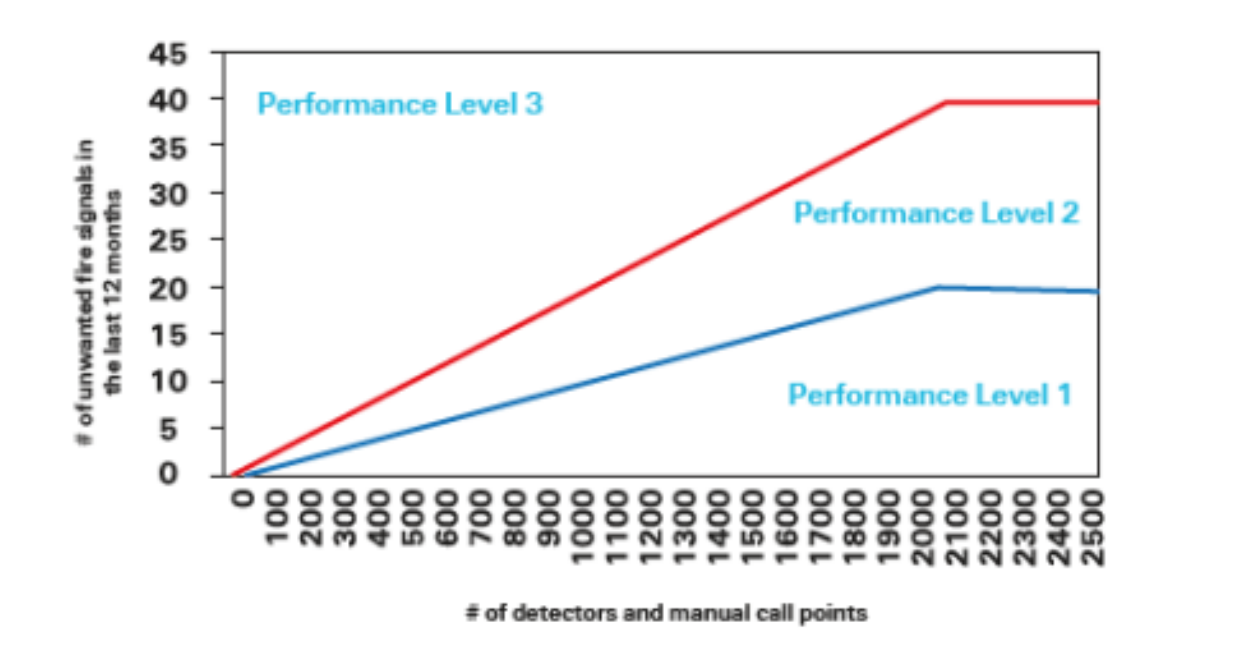
Installations in Malta follow the BS5839-1, but there is no regulation of the fire industry and it is holey left to the consulting engineer to sign off the system and this means they take all the responsibility

Regions with no regulation of the fire industry follow the British standard but it is difficult to monitor as there is not industry association to guide and offer advice on changes to standards.

In regions that follow British standards, changes are delayed. Due to the adoption of the British Standards taking time there can be a significant delay in these changes coming into affect.

Why is it so important to have these controls?
What is the benefit, it is just added cost isn't it ?

CFOA - Unwanted alarms

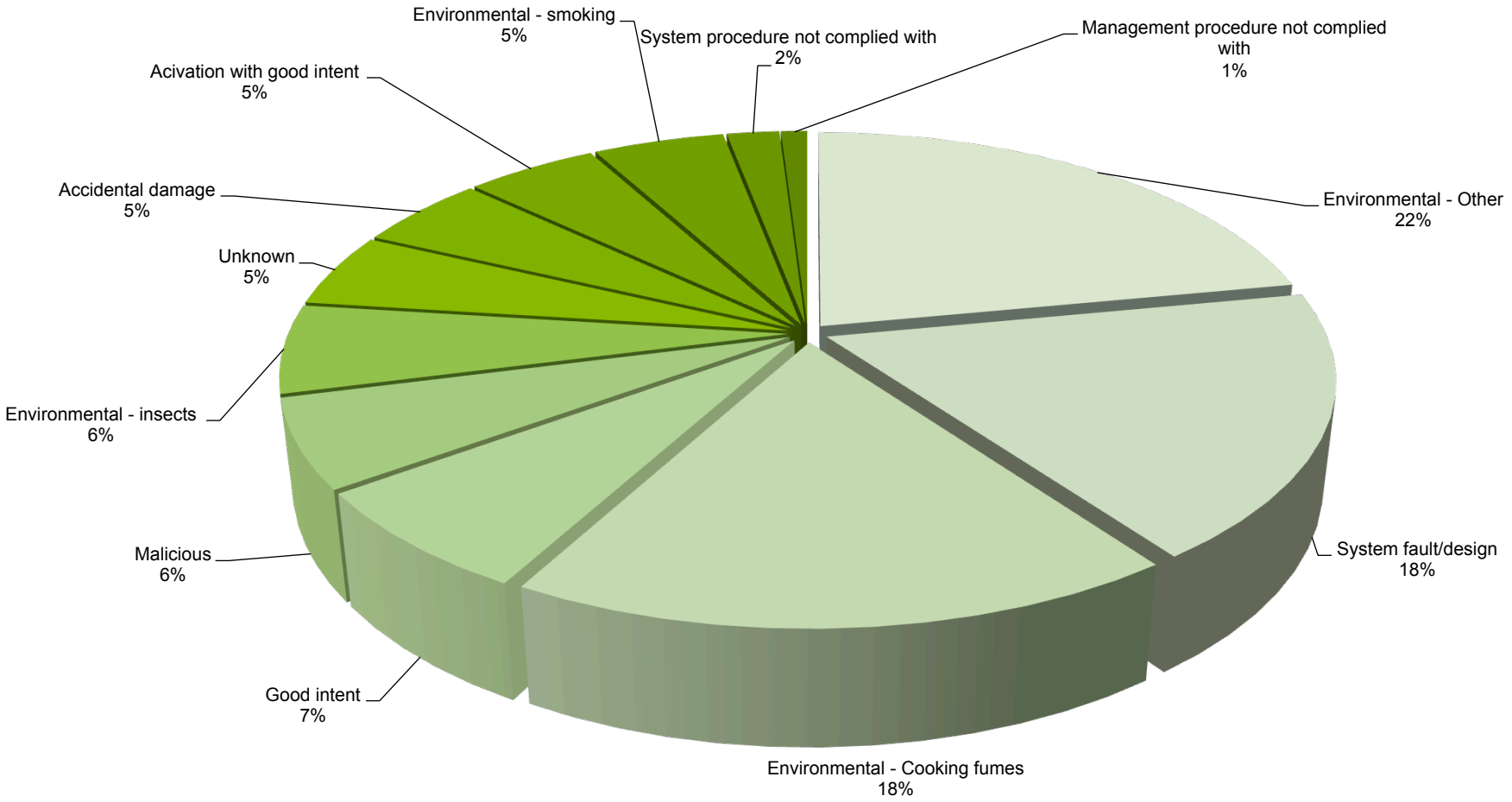


Unwanted alarms implications

- United Kingdom CFOA policy suggests that, where the number of unwanted fire signals generated by a system is other than performance level 1, the fire-and-rescue service may seek to reduce their attendance levels in response to calls of an automatic fire alarm system activation following a process of consultation.

Examples of unwanted alarm cost

Reasons for unwanted alarms



Unwanted alarms

Unwanted alarms implications

- Unwanted fire signals impact upon the treatment and care of patients and can result in the loss of appointments, disruption to care and treatment regimes, and can significantly affect staff morale

- Unit performance in managing unwanted alarms formula $x = D / A$

x = performance D = # of detectors and MCP A = # of unwanted alarms in the last 12months

Grading	Unit's performance	Annual continuous improv goal
A	≥ 100	Maintain
B	100 > x > 50	10% reduction
C	< 50	40% reduction

Unwanted alarm prevention

How can technology help to increase cost saving and efficiency?

- Multi-sensor detectors.
- Various detection and sensitivity modes for day/night (all approved).
- Good system design.
- Equipment with high resilience to electromagnetic interferences.
- Double knock/specific algorithms.
- Video verification.
- Good maintenance programs.

Improve Design to avoid unwanted alarms

System Design Checklist

Physical

- Spacing of devices both sensing and AV
- Sensor Type
- Location – not next to AC vents etc.

Programming

- Sensitivity
- Activation path
- Utilizing full feature set

Solutions

- If sensors are spaced as optical, but heats are installed due to FA risk, then replace product with Multi-sensor to manage unwanted alarm risk, and keep refit requirements to a minimum.
- Adjust dB output of sounders and re-measure .
- Incorporate day/night switching of sensitivity.
- Use double knock alarm patterns across the site or zonal specific

Regulation and Standards to drive improvement

Fire Industry Body to offer guidance

Local industry knowledge

- **Real experiences**
- **Actual Design challenges overcome.**

Drive standards

- Fund research
- Validate standard changes
- Support certified bodies

Results

- Better Systems with fewer unwanted alarms
- Trainined Engineers with real qualifications
- More reassurance from Fire Systems
- Less desruption to business

Thank you!