EMERGENCY VOICE COMMUNICATION SYSTEMS
An EVCS (emergency voice communication system) or Disabled Refuge System is designed for use in buildings that contain refuge areas. This type of intercom system allows emergency services to be in constant contact with the people in the refuge areas who seek assistance.

The Equality Act (formerly The Disability Discrimination Act) made it the responsibility of all companies, nationwide, to ensure that access to buildings and services is available to everyone - there must be no discrimination.

With access provided for all, provision must be made for safe evacuation in the event of an emergency. In some circumstances, those with physical impairments can be assisted by others - but in many situations this is not suitable or safe.

A solution comes in the form of temporary areas of safety - 'refuge areas'. The person in need of assistance is helped to the closest refuge area and awaits safe evacuation.

Refuge areas must meet certain criteria, these are covered in BS9999:2008. As well as describing suitable areas for refuge and the type of construction, the Standard specifies the need for two way communication.

An EVCS allows firefighters and others to communicate with one another during emergency situations. The system also allows communication with disabled persons. It is a “system that allows voice communication in either direction between a central control point and a number of other points throughout a building or building complex, particularly in a fire emergency situation.”

(BS5839-9:2011 3.4).
BS 5839-9:2011
Fire detection and alarm systems for buildings.
Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems

Executive summary

Recommendations for the planning, design, installation, commissioning and maintenance of emergency voice communication systems in buildings.

Abstract

This British Standard, a part of the BS 5839 series, provides recommendations for the planning, design, installation, commissioning and maintenance of emergency voice communication (EVC) systems in and around buildings and at sports, entertainment and similar venues. It ensures that high standards of reliability, safety and security are achieved, together with acceptable standards of performance. This code of practice primarily relates to the use of EVC in assisting both firefighters and those responsible for evacuating buildings or sports stadia in fire emergency situations, including evacuation of disabled persons. Use, other than in fire emergency situations, by disabled persons and others, although not precluded, is not addressed in detail.

In the context of this code of practice, an EVC system contains no portable parts. Mobile telephones and two-way radio sets are therefore not within its scope. Voice alarm systems are primarily intended for the automatic broadcasting of evacuation messages are excluded from this code of practice.

This British Standard does not recommend whether or not an emergency voice communication system should be installed in a given premises. This part of BS 5839 does not cover systems combining electrically the functions of EVC systems with functions of other fire-related or non-fire-related systems.

This part of BS 5839 applies only to emergency voice communication systems for use in a temperate climate such as that of the United Kingdom.
EMERGENCY VOICE COMMUNICATION SYSTEMS (EVCS)

The Compact 9 System

The Compact 9 System is ideal for small to medium sized installations which don’t require the complexity of a full network solution.

Key Features

- BS5839 part 9 (2011) compliant
- 4 navigation keys
- 6 status LED’s
- 4 line, 20 character LCD
- Simple menu programming
- Contact outputs to interface with Fire Detection or Voice Alarm Systems

Benefits

- Using the 10 Line Exchange unit extends the system to 19 communication lines
- In addition to Type A and Type B Outstations it can also monitor Emergency Assist Alarms (using a 2 core radial)
- Connection between the exchange unit and slave is achieved using standard 4 core fire rated cable

This system comprises of the 9 Line Master Exchange Unit and up to 9 Outstations (Type A, Type B, or Emergency Assist Alarms). Using the 10 line Slave Exchange Unit this system can be easily expanded to 19 lines.

The Compact 9 is modular in design and the controller manages all functions for the first 9 zones. There is no need for additional equipment such as power supplies.

The Compact 9 Line Master Exchange Unit is a self contained enclosure housing a Master Handset, 9 Line Exchange, power supply, and battery charger. It can be surface or semi-flush mounted as standard.

TYPICAL System Architecture
The Network 8 System

The Network 8 EVCS modular architecture is ideal for use in larger buildings with up to 256 communications zones. Suitable for use in high rise buildings as well as large complexes such as schools and universities.

Key Features

- Each Exchange can control up to 8 independent monitored lines
- Controls up to 256 Lines (32 exchanges)
- Built in monitored 1A battery charger
- 12 status LEDs
- Dry contact for fault or "in-use" indication
- Serial port for configuration or updates
- Dual network ports which provide power for the master handsets

Benefits

- Clear LED indication on the Exchange Unit for effective & easy fault finding
- Can be easily connected to a fire panel or BMS
- Upload information quickly via a PC using the serial port
- Distributed system architecture, no central exchange rack required

The Network 8 System greatly reduces the cabling requirement and equipment ‘on view’ in such key places as reception areas, making the system much more aesthetically pleasing to the customer as well reducing the cost of installation.

The system is controlled by the Network Master Handset. It is possible to add up to 7 additional master handsets allowing the Network 8 to deliver a highly flexible emergency management strategy. Larger systems are built using a series of Exchange Units connected to a loop network providing cost effective and secure installations.

TYPICAL System Architecture
EMERGENCY VOICE COMMUNICATION SYSTEMS (EVCS)

Key Features
- Compact design
- High volume ringer
- Status LED
- Telecoil for hearing impaired users
- Full duplex operation
- Automatic dialling when ‘off hook’

Benefits
- Can be used on all Gent EVCS systems providing compatibility across the range
- Can be used as a fire telephone or a disabled refuge call point
- Magnetic push catch, for quick and easy access

The Type A Outstation is a compact unit which offers easy access via a magnetic push catch door. The flush mountable unit offers a unique front levelling system allowing the back box to be mounted at a slight angle whilst still retaining a true front face and door. A surface mountable unit is also available.

Fire telephones are hardwired full duplex communications systems with monitoring and battery backup, and are required in buildings over 4 stories in many countries in the world (in the UK this is governed by BS 9999).

These are provided as a backup to traditional fireman’s radio systems, which can fail to operate in many high rise environments due to the large amount of steel in the building, and the “corona” effect of fire on radio broadcasts.

Type A Outstation

The Type A Outstation is compatible with all EVCS systems for use as a standard Fire Telephone or Disabled Refuge call point.
Type B Outstation

When choosing the Outstation type for use with an EVCS we recommend reading section 11 of BS 5839:2011 which deals with Outstation Types and states as follows:

11.1.a

An outstation intended for evacuation or firefighting use should be Type A. A Type B outstation should be used for such purposes only where it is impractical to install a Type A outstation.

11.1.b

An outstation intended for use by disabled people at refuges may be either Type A or Type B. However, Type B outstations should be used in situations where the outstation will be operated by members of the public.

Key Features

- Compact design
- Loop output for hearing impaired users
- Full duplex operation, allowing 2 way voice communication
- High volume ringer
- Status LED
- Flush bezel available

Benefits

- Can be used on all EVCS systems
- Full duplex operation, allowing 2 way voice communication
- Tactile braille signage to assist partially sighted people enabling them to easily operate the refuge point

All Type B Outstations are defined in BS 5839 part 9 and can be used as a Fire Telephone or Disabled Refuge call point. The Type B Outstation is available in red, green and stainless steel. Tactile braille signage assists partially sighted people to easily operate the Refuge Point.

Choosing outstation type
EMERGENCY VOICE COMMUNICATION SYSTEMS (EVCS)

Emergency Assist Alarm Range

The Emergency Assist Alarm Kit has been specifically designed to integrate disabled call functions into the EVCS network or EVCS compact ranges.

Key Features

- Monitored to BS 5839 9
- Remote powered from EVCS exchange
- Dual loop pull cord
- High contrast labels
- Braille on ‘cancel’ button
- Blue indication

Benefits

- Saving power, no PSU is required remote powered by EVCS system
- One install saves running 2 separate systems
- Calls from either disabled toilets or refuge points are monitored from one central location
- Tactile braille signage to assist partially sighted people to easily operate the ‘cancel’ button

It has now become very common for the disabled toilet to be specified as part of the refuge system. Disabled toilet alarms are required by Building Regulation Document M, and by integrating it with the Emergency Voice Communication System all calls relating to disabled communications can be displayed in a single point.

The Emergency Assist Alarm Kit solution is fully monitored and battery backed by the EVCS system, saving local power supplies and giving confidence in the system integrity.

The Emergency Assist Alarm Kit shows up as a call on the EVCS system, but has no speech path so a conversation cannot be had with the occupant, use of the Type B Outstations would allow this.

TYPICAL System Architecture

[Diagram of the system architecture]

The Emergency Assist Alarm Kit Range

The Emergency Assist Alarm Kit has been specifically designed to integrate disabled call functions into the EVCS network or EVCS compact ranges.
Key Features
- Designed to comply with all regulations and recommendations
- High visibility
- More than one 4 way splitter can be used
- Small compact design

Benefits
- Up to 4 disabled toilets monitored in one area
- Uses blue LEDs to avoid confusion
- Visibility to remote staffed areas
- No mains or Power Supply Unit (PSU) required at each disabled toilet

Extend your Emergency Assist Alarm Stand Alone Unit by adding a 4 Way Splitter Unit.

Staff can then, at a designated area, such as a reception or security desk monitor and react to an alarm in four separate disabled toilets swiftly and efficiently, from one easy to use and space saving device.

Typical emergency alarm assist system using a 4 way splitter