

Emergency Voice Communication Systems

Frequently Asked Questions



Q What is an Emergency Voice Communication System?

A 'Emergency Voice Communication System' is the generic technical term to cover 'Fire Fighting Telephone Systems' and 'Disable Refuge Communication Systems'.

Q What is a Disabled Refuge?

A A Disabled Refuge is a relatively safe area within a building or exit staircase where mobility impaired occupants can be placed (not just wheelchair users) while the main building occupancy is evacuated, allowing building management and emergency services to safely assist these people from the building when stairwell crowding has eased. Mobility impairment is defined as not being able to walk 200 m continuously without aid, and includes arthritis sufferers, people with leg and back injuries and women over 6 months term pregnancy.

A Disabled Refuge system is not just for use during a fire, must be available at all times and **MUST NOT BE DISABLED OUTSIDE OF A FIRE EMERGENCY** (for a full description see building regulations approved document B).

Q What is a Disabled Refuge system?

A An EVCS (Emergency Voice Communication System) is a fixed, monitored and maintained, bidirectional, full duplex voice communication system to assist the orderly evacuation of disabled or mobility impaired people and enhance fire fighters communication during emergencies. Disabled refuge systems are required in the UK in all non domestic premises over 1 story or where an emergency exit is by stairs (for a full description see building regulations approved document B).

Q Why do I have to have a Disabled Refuge EVCS?

A The RRO, Regulatory Reform (Fire Safety) Order, is Government Legislation and an act of Parliament. The RRO requires a company to assess their Fire Safety systems which includes EVC Refuge systems on a regular basis commonly once every one or two years to make sure they comply with the CURRENT standards and regulations. The risk assessment of a building must be carried out to “current standards” not those when building systems were implemented. Also current Building Regulations insist that all new non-domestic buildings with more than one storey provide ‘Refuge’ areas – relatively safe places where people who cannot easily use fire escapes and evacuation lifts may call for assistance and wait until help arrives. Simple, effective two way communication (Refuge system) in these areas is essential; firstly to assist rescue teams in determining where assistance is required and secondly to reassure people help is on the way.

Q What cables do I need?

A

Compact 5 Line Exchange Unit (EVCS-CMPT)

Network cables:	None
Outstation cables:	2 Core (1 mm or 1.5 mm)

Compact 9 Line Exchange Unit (EVCS-CMPT9)

Network cables:	4 core fire rated cable.
Outstation cables:	2 Core (1 mm or 1.5 mm)

Network System Network Master Handset (EVCS-MS), Network 8 Line Exchange Unit (EVCS-XC)

Network cables:	8 core fire rated cable - 1 off 4 pair, 2 off 4 core 1mm CSA soft skin or 4 off 1 pair MICC twisted
Outstation cables:	2 Core (1 mm or 1.5 mm)

Q Do I always have to use enhanced cables?

A Following the publication of BS5839 pt9: 2011, the guidance on cables for the EVCS has changed, following a relaxation in the requirements of the standard.

Fire Fighting Telephone Systems

Any system with Fire Fighting Telephones (Normally Type A Outstations) must have all wiring to these outstations and any necessary network cables interconnecting parts of the system in Enhanced fire rated cables.



Disabled Refuge Systems

In buildings under 30 metres in height, or any building with sprinklers fitted, the wiring of Disabled Refuge points (normally Type B Outstation) may be in standard fire rated cable as long as the planned evacuation will be completed within 30 minutes.



If the building is over 30 metres in height without sprinklers, or where the evacuation will take place over multiple stages exceeding 30 minutes, enhanced fire rated cables must be used.

Network cables for systems comprising of purely Disabled Refuge Outstations configured as a ring may also be in standard fire rated cables.

In BS5839 pt9 -2011 section 14, the commentary suggests that in an EVCS intended for only Disabled Refuge the use of standard fire resistance cable may be acceptable provided the period specified for evacuation of the building is less than the fire rated duration of the cable.

Disabled toilet call points.

The revised BS5839 pt9: 2011 now recognises the addition of disabled toilet call systems to EVCS, however it gives no guidance on their use, as this is covered under Building Regulations Approved Document M.

There is no requirement for these systems to be monitored or battery backed, however with the EVCS toilet extension we have included these features as standard. The only cable requirement may come from the building design statement, and typically this will require low smoke and fume cables (LSF), although they can also be wired in standard fire rated cable for ease of identification.



Combined Systems

When a system consists of a mix of Fire Fighting Outstations, the wiring must be enhanced, but individual spurs to Outstations dedicated solely for Disabled Refuge may be wired in standard fire-rated cable as long as the distance covered by that cable does not exceed 30 metres vertically in non sprinklered buildings, or the evacuation plan for this segment of the building will not exceed 30 minutes.

General Guidance

In complex buildings or where systems are being quoted without access to the fire evacuation plan we recommend all wiring to be enhanced, or suitable caveats and detailed assumptions are placed on the design certificate required by BS5839 pt9: 2011.

Q Does an EVCS need a dedicated power supply?

A Yes, BS5839 PT 9 2011 – 13.1b The mains supply circuit(s) to all parts of the EVCS except outstations should be dedicated solely to the EVCS, and should serve no other systems or equipment. The circuit(s) should be derived from a point in the building's electrical distribution system close to the main isolating device for the building.

Q Some Manufacturers state that their Type B Outstations can operate with high quality, full duplex speech in areas with up to 70dB of ambient noise – Is this correct?

A **BS5839 pt9: 2011 Outstations Section 2-11.16** As far as practicable, outstations in buildings should be located where background noise is normally low, preferably not more than 40 dB(A). Where there is a higher level of background noise in an emergency, the installation of an acoustic hood or structure around the outstation might help to reduce this to an acceptable level. Fire alarm sounders should not be located near to outstations.

Note 1: The use of visual alarm devices instead of audible alarm devices may be appropriate, which may mean varying from the recommendations of BS 5839-1, in which case this should be documented.

Note 2: BS 8300:2009, 9.1.2 gives advice on acoustic treatment of spaces and recommends that the recommendations of BS 8233 should be followed.

Note: All EVCS Type B outstations can also operate with up to 70db of ambient noise but this would be against the recommendations of BS5839 PT9 section 2-11.16 which states 'preferably not more than 40 db(A)'

Q Why on some Refuge Systems is the Master Station designed as a hands free unit?

A BS5839 pt9: 2011 Master stations Section 2-12.1 As a minimum, a master station will have a telephone style handset or microphone and loudspeaker for voice communication purposes, controls for making calls to, and receiving calls from, outstations, indicators to identify incoming calls, and fault and status indicators) For communication with outstations, a master station should have either:

- 1) a telephone-style handset; or
- 2) a noise-cancelling microphone mounted on a flexible or fixed arm with in-built windshield to prevent "popping" noises whilst speaking, and a separate panel- or desk-mounted loudspeaker.

Note 1: Option 2) is the less desirable option.

Note: All Notifier EVCS Master Stations comply with a telephone style handset.

Q Can a Type B Outstation have an Induction Loop?

A Yes, the Emergency Voice Communications System (EVCS) Type B Outstation has a line out for an induction loop which is an optional feature if required. There is no requirement under any legislation to have an induction loop fitted. It is down to the individual risk assessment of a building as to whether this would be of benefit to the people using it. The size of the loop amplifier will be decided by size of loop area.



I only want the Refuge system to be activated by Fire Panel?

A An EVCS should not be dormant at any time and not activated by a fire panel. Please see notes below.

BS5839 pt9: 2011 Section 11.5

k) Outstations provided for use by people at refuges should be readily available at all times and should not be secured.

BS5839 pt9: 2011 Section 1 Clause 6

Variations from the recommendations of this standard state that EVCS should be in operation at all times and not just in a fire situation. Any deviations from this must be logged and agreed by all parties and must be clearly identified in all system documentation. Variations may arise from a fire risk assessment, or may be based upon the engineering judgment of a competent person. The competent person takes full responsibility under the RRO (fire safety) and is liable for deaths or injury resulting in their decisions under the corporate manslaughter act.

A refuge system is for the aid of disabled people at all times. The term disabled people can also include any person who is unable to safely use an exit route, e.g. people with back or sports injuries, pregnant women and those who cannot walk unaided.



Some specifications are now asking for all Refuge calls including disabled toilets to be monitored by the same panel, can we do this?

A Yes, The Emergency Assist Alarm Kit is designed to be able to connect to a EVCS Master Refuge Panel by using one of the available lines and at no extra cost. This is connected via the ODI (over door Indicator) from each disabled toilet.



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