

What is an Emergency Voice Communication (EVC) System?

An emergency voice communication system is a life safety intercom (or telephone) system designed to operate reliably in a fire alarm emergency. Its equipment and wiring must be monitored for faults that might occur prior to the emergency and its cabling and battery backup supply must ensure it keeps working during the emergency. According to BS5839 part 9, there are two types of EVC system; disabled refuge and fire telephone. They may be separate, or they may be combined into one system.

Disabled refuge systems

A disabled refuge system typically connects handsfree intercom outstations to a central control room and is used to inform management that someone needs immediate assistance to exit the building.

Fire telephone systems

A fire telephone system is used by management (and marshals at a sports ground) and the fire service before, during and after a fire to communicate with fire marshals and fire fighters.

Regulations affecting EVC systems?

The installation of an emergency voice communication system is governed by BS5839 Part 9: Code of practice for the design, installation, commissioning and maintenance of emergency voice communication systems.

Disabled Refuge Systems are called for by:

- Building Regulations; Approved Document B (Fire Safety); Volume 2, Section 4: Design for vertical escapes
- BS9999: Code of practice for fire safety in the design, management & use of buildings; Clause 41.9 Communications; Clause 46.8 Use of refuges
- Regulatory Reform Order (Fire Safety Order) Oct 2005
Risk assessments undertaken by the responsible person must make provision for means of escape for disabled people. Supplementary Guide: Means of escape for disabled people
- Equality Act 2010 (supersedes the Disability Discrimination Act)
- UN Convention on the rights of people with disabilities

Fire telephone systems are called for by:

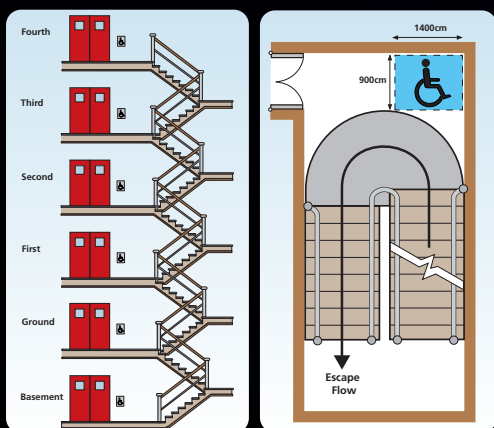
- BS9999: Code of practice for fire safety in the design, management and use of buildings; Clause 24 Communication systems for fire and rescue service use
- London District Surveyors Association in conjunction with LFCDA Fire Safety Guide No. 3; Section 2: Fire Safety Measures
- London Fire and Civil Defence Authority (London Fire Brigade) Fire Safety Guidance Note Number: 30 (Rev 3)
- Guide to safety at sports grounds; 16.11: Telephone communications – internal

Where are disabled refuges / Type B outstations required?

Refuge areas are called for in all non-domestic buildings with more than one storey and they should be provided at each storey exit (i.e. each protected stairway affording egress).

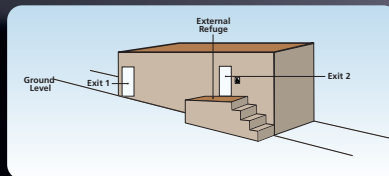
Examples of a refuge area include an enclosure such as a protected lobby, corridor or stairway or an

area in open air such as a flat roof, balcony, podium or similar place which is sufficiently protected (or remote) from any risk of fire and has its own means of escape.

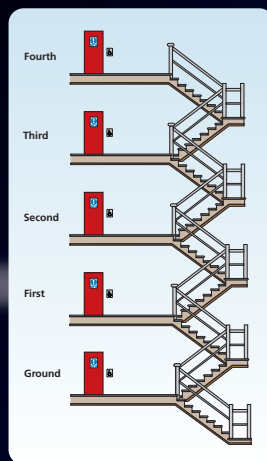


Examples of a Type B outstation installed in the protected stairway providing egress from each storey

Type B outstations should be provided in all refuge areas. They should be wall mounted, in an easily accessible, well illuminated and unobstructed position 900 mm to 1.2 m above the ground. They should allow members of the evacuation team to determine how many disabled people there are, the nature of their disabilities and the refuges in which they are located.



Example of a Type B outstation installed on an external fire escape staircase providing egress from each storey (right) and the final exit (left).



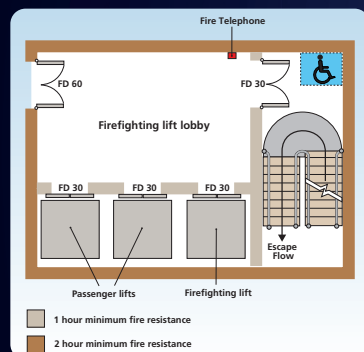
Note that refuges are intended for temporary use only (a few minutes) whilst building management are sending trained staff to deal with the evacuation and should not be confused with "places of relative safety".

Where are fire telephones / Type A outstations required?

In buildings which require a fire telephone system, Type A outstations should be located at every fire fighting entrance point, fire escape landing and fire fighting lobby. They should be wall mounted 1.3 m to 1.4 m above the ground in an easily accessible, well-illuminated and unobstructed position.

In sports stadiums, emergency telephones should be located no more than 30 metres from stewards' positions or other normally manned areas such as turnstiles, public address operating booths, offices of senior officials, lighting control points, first aid rooms, police rooms, etc.

They should allow communication between management and/or fire marshals and/or the fire service before, during and after a fire.



Example of a Type A outstation installed opposite a firefighting lift within the firefighting lift lobby on each floor

Master Controller Location

The system's Master Controller should be located in the control room, security room or next to the main fire panel or repeater panel and it should be permanently manned in an emergency. The centre of the Controller's controls (if wall mounted) for a standing operator should be 1.4 m to 1.5 m above the floor.

If the power supply to the Controller fails, the batteries provided should run the system in its quiescent state for at least 24 hours and then allow emergency voice communication for at least 3 hours. The Controller (and all Outstations) should also offer full duplex speech, i.e. the concurrent transmission and reception of speech in both directions.

Communication between the Controller and an Outstation should normally be initiated from the Outstation. However, the ability to call an Outstation from a Controller is also allowed. Indeed, standards such as BS5588 part 8 acknowledge keeping people informed during an emergency will help avoid anxiety and confusion.

Cables, wiring and interconnections

All of the cables used in an EVC system should be of enhanced fire resistance (26.2e of BS 5839-1:2002) except for underground sections of cabling at sports grounds.

Inspection and servicing

Inspection and servicing should be carried out every six months by a competent person/organisation with specialist knowledge of the installed equipment.