

BS 8629:2019 +A1:2023

POCKET GUIDE TO EVACUATION ALERT SYSTEMS



This guide is written for individuals and organisations carrying out design, installation, commissioning and maintenance of evacuation alert systems. It is not a substitute for BS 8629 which should be read in full. It is strongly recommended that specific Euro-VAC training is also attended.





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WHAT IS BS8629?

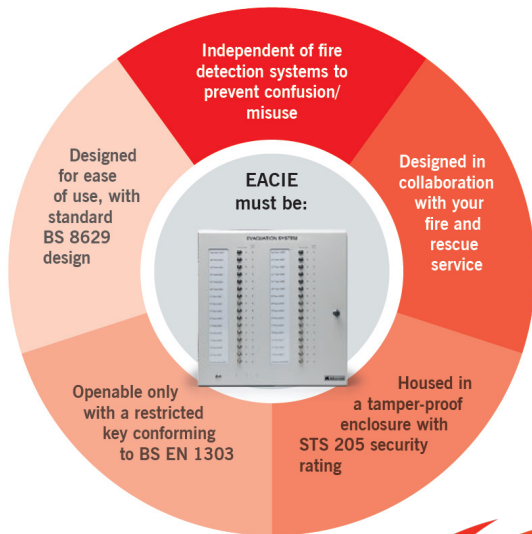
BS 8629 is the BSI code of practice for the design, installation, commissioning and maintenance of evacuation alert systems (EAS) for use by fire and rescue services in buildings THAT contain flats.

Application of BS 8629

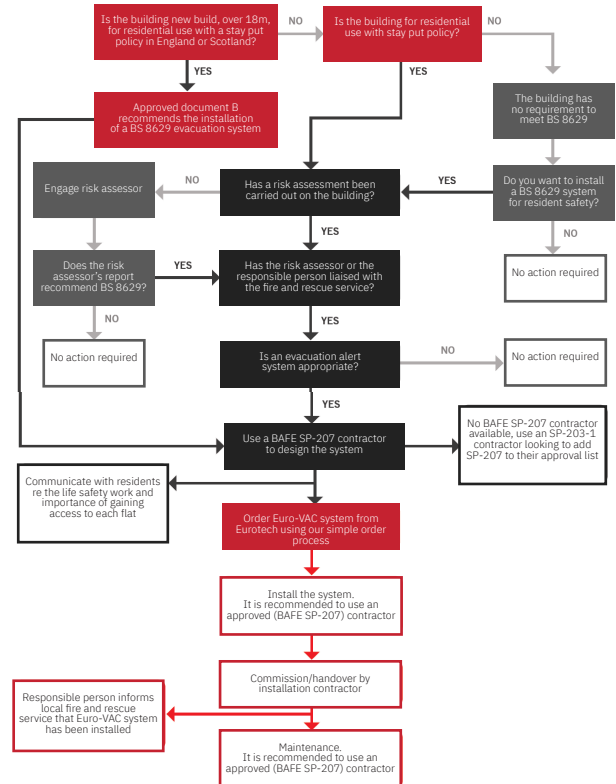
-  Mandated in Scotland for new residential buildings over 18m
-  From December 2022, an EAS conforming to BS 8629, is required in new high-rise residential buildings over 18m in England (*Building Regulations Approved Document B: Fire Safety*)
-  When the building has a 'stay put' policy
A stay put policy means that if there is a fire in a flat, the fire should be contained within that flat. Therefore, only the occupants of flats directly affected by smoke or fire need leave the building. All others are safe to stay unless otherwise directed by the fire and rescue service.
-  These systems are not fire detection and fire alarm systems – they do not incorporate automatic fire detectors or manual call points
There is normally no need for any form of communal fire system in a modern block of flats; all that is required is the provision of smoke and heat alarms within each flat (BS 5839-6).

WHAT ARE THE KEY POINTS OF BS 8629?

The code of practice recommends the installation of EACIE (evacuation alert control and indicating equipment) which should be independent of fire detection systems and designed to support any evacuation strategy chosen by the FRS (fire and rescue service).



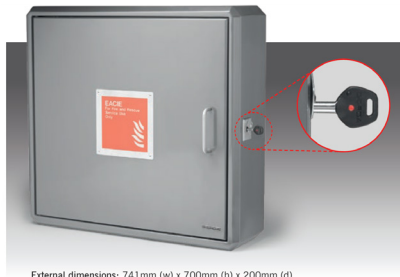
DO I NEED AN EVACUATION ALERT SYSTEM?



EACIE ENCLOSURE

The EACIE should be housed within a cabinet as the system is intended for exclusive use by the FRS, and only accessible by them using a unique key.

- The cabinet should be secure against unauthorised use or casual vandalism and should prevent sight of the controls within
- The security housing should satisfy the requirements of LPS 1175:Issue 8.0 for security rating classification B3 or STS 205:Issue 7 for resistance class BR2
- The lock cylinder should conform to BS EN 1303:2015
- A sign bearing the words 'EACIE: for Fire and Rescue Service Use Only' should be fixed to the door of the cabinet
- Access to the EACIE via patented key only – exclusive to the FRS.

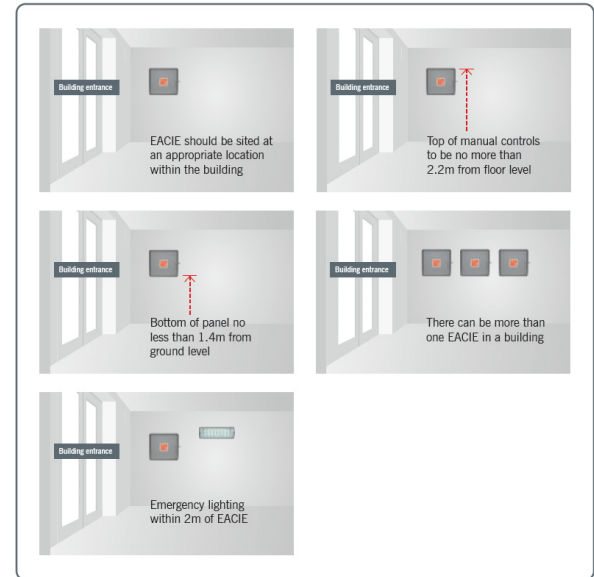


External dimensions: 741mm (w) x 700mm (h) x 200mm (d)
Weight: 69kg

SITING THE EVACUATION ALERT PANEL

The EACIE should be sited inside the building in a location where fire fighters responding to a fire can easily find and operate the controls and see its indications.

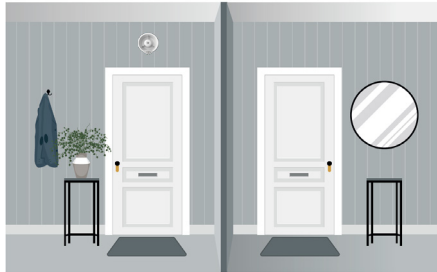
This will normally be on a wall close to the building's normal fire and rescue service entry point and should be readily accessible at all times. An emergency lighting luminaire should be installed within 2m horizontally of the EACIE.



SITING THE EVACUATION ALERT DEVICES

There are two key considerations when siting EA (evacuation alert) devices:

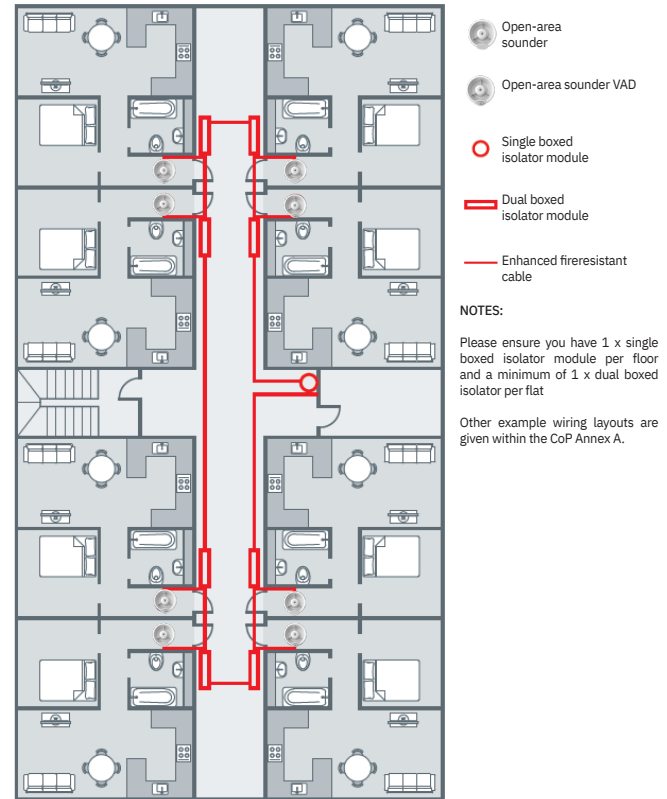
1. Ensuring adequate audibility/visual awareness
2. Avoidance of casual tampering



Recommendations

- Install all evacuation devices on the ceiling or the wall less than 150mm below ceiling level
- A single EA device (sounder – with or without visual alert) within each flat will usually be sufficient, subject to the sound pressure levels being achieved
- A single-tone evacuation alert signal should be used, no two-stage evacuation alert signals should be given
- Evacuation alert must be clearly distinguishable from any other alarm signal and give clear warning of the need to evacuate
- Evacuation alert sound pressure level must be at least 85dB(A) at bedroom doors (door open) and 60dB(A) in the principal habitable room with the door closed
- Where additional sounders are needed, a larger number of quieter sounders is preferable to a single very loud sounder
- Wireless audible devices are permitted
- Always ensure that a loop calculation is carried out.

EXAMPLE LAYOUT



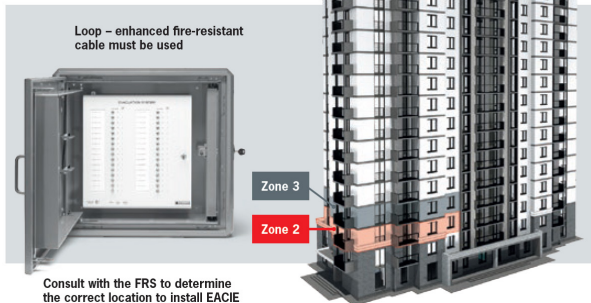
EVACUATION ALERT ZONES

EA systems are critical in larger, complex buildings where the FRS may decide to evacuate all of the flats on one storey, or only one part of a single storey containing many flats.

Dividing the building into a number of individual EA zones ensures that the EA device status in one zone is independent of the status of EA devices in all other EA zones. By grouping EA devices in this way, occupants of one zone required to leave the building can be told to do so without alerting occupants in other areas required to 'stay put'.

Evacuation alert zones recommendations

- 🕒 Each EA zone must operate independently
- 🕒 The EA signal in one zone must not be readily audible in another
- 🕒 No EA alert zone should extend beyond a single storey of the building
- 🕒 A common EA signal should be used throughout all EA zones
- 🕒 Premises management should ensure the fire and rescue service agrees the configuration of EA zones.

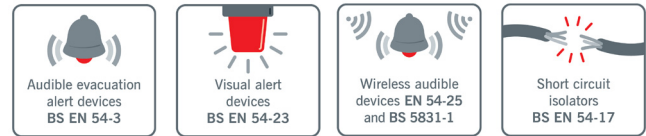


SYSTEM COMPONENTS

Under the Construction Products Regulations 2013, sounders and power supply units are required to conform to the relevant harmonised standard.

There is no such relevant standard for the EACIE, therefore it is expected to conform to certain clauses of BS EN54-2.

Standards of conformity



Power supplies

The power supply is one area where the product selected can be supported by an EN54-4 certification to show it has been third-party tested and is fit for purpose. If an enclosure for a power supply unit or standby batteries is accessible to unauthorised persons, it must be housed within a cabinet where the security housing satisfies the requirements on p7.

Power supplies to meet BS EN 54-4 requirements

If mains power fails, standby batteries must maintain the system in operation for at least: **72 hours + 30 minutes** with all evacuation alert zones active

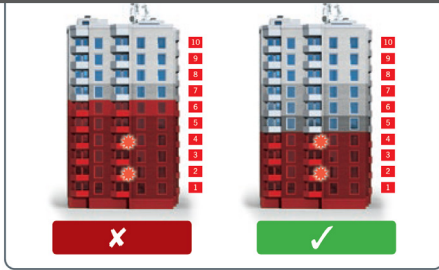
If an onsite generator is present, standby time can be reduced to **24 hours + 30 minutes in alarm**

CIRCUIT MONITORING & INTEGRITY

A fault on one circuit containing evacuation alert devices should not affect any other circuit

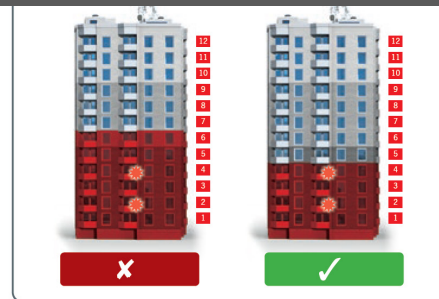
In buildings with 10 storeys or fewer of a BS 8629 evacuation system

Two simultaneous faults on an evacuation alert device circuit should not disable the evacuation alert devices on more than half the number of storeys with flats



In buildings with 10 storeys or more:

Two simultaneous faults on an evacuation alert device circuit should not disable the evacuation alert devices on more than a third of the number of storeys with flats

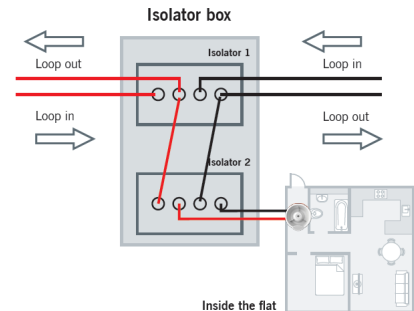


INSTALLATION

Please note that the EACIE enclosure weighs 69kg. We recommend that a risk assessment be conducted prior to installation based on the location of the EACIE panel and enclosure, and that manual handling guidelines be adhered to.

1. Open the packaging and check contents
2. Check supporting construction
3. The approximate weight of the empty enclosure is 69kg
NB: the supporting structure to which the EACIE enclosure and its contents will be attached, must be strong enough to support their weight. The EvacGo is supplied with masonry fixings, however these may not be appropriate for the substrate. Always carefully check the wall construction and use the appropriate fixings
4. Open enclosure and remove all components
5. Place the template on the wall and line up using spirit level (refer to BS 8629 when selecting the location for the enclosure) (see page 8)
6. Ensure there are no cables or pipes in the way of the fixing points
7. Mark fixing points
8. Drill holes appropriate for fixings and insert plugs
9. Affix the EACIE enclosure to the wall
10. Attach the pull handle to the EACIE enclosure door
11. Ensure all items are removed from the EACIE enclosure before closing the door
12. Once you no longer need access to the EACIE, remove the latch protection from both locking points
13. Now the door can be locked and installation completed
Important note: once the door is locked, you will require a key to re-open it. This key will be with the registered keyholder

Wiring for Eurotech's Euro-VAC evacuation alert system



COMMISSIONING & HANDOVER RECOMMENDATIONS

The system should be commissioned by a competent person who has access to the system specification and other relevant drawings and documentation.

In the UK, adherence to our standards – BS 5839-1/BS 5839-6 and BS 8629 – is a fundamental way of ensuring that best practice is followed. Despite this, all codes of practice allow for variations, so ensure you understand what and why any deviation from the main recommendations are being proposed.



The BAFE SP207 scheme covers the design, installation, commissioning and maintenance of evacuation alert systems and supports the British Standard 8629. Contractors that feature on the BAFE Fire Safety Register are assessed by UKAS accredited certification bodies, giving peace of mind that the fire protection measures applied are fit for purpose.

During commissioning the following should be checked:

- The sound pressure levels in all flats
- That all manual controls (toggle switches) and LEDs operate correctly
- There is adequate labelling for each evacuation zone
- The long-term maintenance consumables are itemised in the handover pack

Once commissioning is complete, a certificate is issued, signed by the competent person confirming the system's conformity and handed over to the premises management.

MAINTENANCE



Premises management should inspect enclosure every month for signs of tampering



Competent person must inspect and test system every 6 months



Operation of each individual evacuation alert device must be checked over a 12-month period



The Euro-VAC evacuation alert system from Eurotech includes a self-test facility to easily confirm that every sounder is operating correctly



Each manual control must be tested



Entry to the flat is not required; confirmation of sounder operation can be made by listening outside



Systems that are not tested/inspected as per the guidance are not BS 8629 compliant

CHECKLIST

Important note: Variations, unless properly recorded and agreed by all relevant parties, may result in system non compliance.

Relevant standard and clause (where applicable)	Design module	✓
15.4(e)	Has the correct standby power supply period been specified?	
15.4(e) Annex B	Are design battery capacity calculations available?	
15.4(e) Annex B	Have the correct quiescent and alarm currents been used?	
15.4(e) Annex B	Is the battery capacity, as designed, adequate?	
Standby period = At least 72hrs + 30 mins in full alarm mode	Iq = Ia = Total current = Minimum battery capacity =	
At least 24hrs + 30 mins in full alarm mode with auto start generator and 24/7 building supervision	Iq = Ia = Total current = Minimum battery capacity =	

	Cables	✓
16.2(b)	Are cables with enhanced fire resistance used where required?	
16.2(e)	Are methods of cable support satisfactory?	
16.2(f)	Are all junction boxes suitably labelled?	
16.2(g)(j)	Are cables adequately protected against mechanical damage?	
16.2(k)(l)	Is there suitable segregation from other services and other fire alarm cables, where required?	
16.2(m)	Are fire resistant alarm cables a single common colour?	

	Mains power supplies	✓
15.2	Has a suitable dedicated mains supply been provided?	
15.2(e)(f)	Is labelling satisfactory?	
19.2(e)	Has means of safe isolation been provided adjacent to all equipment requiring a mains supply? (see BS 8629, 19.2(e) Note 2)	

	Circuit design	✓
8.2.1	Are circuits monitored adequately? (e.g. are the correct indications given during fault conditions?)	
8.2.2(a)(d)	If a fault occurs on one circuit containing EADs, are all other circuits unaffected?	
8.2.2(b)	If a fault or short circuit occurs on an EAD in a flat or a number of flats, do all other flats remain unaffected?	
8.2.2(c)	Is all EAD circuit wiring separated from fire within a flat by fire-resisting construction? (with the exception of short connections)	
8.2.2(e)	Are the recommendations of BS 8629 met for two simultaneous faults on an EAD circuit?	
8.2.2(g)	Where two or more EAD circuits are required, do separate cables serve these circuits?	

	Zoning	✓
8.2.2(c)	With the exception of short connections (e.g. between a corridor and a flat), is all wiring of EAD circuits separated from fire within a flat by fire-resisting construction?	
9.2	Is the evacuation alert zoning satisfactory?	
9.2(a)(b)	Is there minimal overlap of evacuation alert signals between zones? If there is overlap, has this been minimised to avoid confusion?	
9.2(c)	Are evacuation alert zones restricted to a single storey?	
13.2.2(i)	Have correct floor designations been used?	
13.2.2(j)	Has a zone plan or suitable mimic diagram been provided?	
9.2(d)	In maisonettes, are all EADs on the same zone as the entrance level EADs?	
9.2(f)	Is an alert signal given only in the zone(s) requiring evacuation?	
13.2.2 (b)	Is there a visual indication (map or list) within or immediately adjacent to the EACIE enclosure to indicate any flats that do not have an EA sounder fitted?	

	Evacuation alert devices (siting)	✓
12.2(a)	Is an EAD installed within the hallway or in the room into which the flat entrance door opens?	
12.2(b)	Have additional EADs been provided (where necessary) to achieve 60dB(A) in all habitable rooms (with doors closed)?	
12.2(c)	Have EAD been installed on ceiling or on walls less than 150mm below ceiling level?	

	Evacuation alert sounder audibility	✓
7.2(c)	Are visual alarm devices compliant with BS 5446-3:2015 or BS EN54-23 and sited accordingly?	
10.2(a)	Are the sounders of an appropriate type (e.g. in relation to frequency)?	
10.2(b)	Is the evacuation alert signal clearly distinguishable from the sound produced by any other alarm system in the flat (e.g. smoke alarm, intruder alarm, CO detector)?	
10.2(c)(d)	Does the sounder layout appear suitable for the sound levels required?	
21.1.2(c1)	Have sound levels been measured and any shortfalls identified?	

	Control and indicating equipment/power supplies	✓
8.2.1(d)	Do batteries connected in parallel give the correct fault indications?	
8.2.2(h)	Where PSU equipment is in a separate enclosure from the EACIE, are the supply cables duplicated and separated by at least 300mm where practical?	
8.2.2(i)	Where PSUs and/or standby batteries are housed in a separate enclosure, are they adequately protected against overcurrent?	
8.2.2 (j)	If an additional enclosure is needed for PSU or standby batteries, does it meet the security requirements of BS 8629?	
13.2.1(a)(c)(f)	Is the siting of EACIE & PSUs appropriate?	
13.2.1(b)	Has there been consultation between premises management and the FRS regarding the siting of the EACIE and PSUs?	
13.2.1(d)(e)	Are ambient light levels and emergency lighting provision satisfactory in the vicinity of the EACIE?	
13.2.1(g)(h)	Are the EACIE and cabinet mounted at the correct height? Bottom of cabinet min 1400mm above floor level Topmost control 2200mm above floor level	
13.2.1(h)	Does the EACIE cabinet meet the security requirements of BS 8629?	
13.2.1(j)	Is the cabinet correctly 'signed'?	
13.2.2 21.1.2(c2)	Are functional requirements of BS 8629 satisfied?	
13.2.2(n)	Do evacuation alert devices operate within 10 seconds after operation of an 'evacuate' control?	
13.2.2(o)	Confirm a master 'evacuate' control has not been provided	
13.2.3(a)(b)(c)	Is any interfacing in accordance with BS 8629?	
15.4(b)	Are batteries for standby power supplies of a suitable type?	
15.4(c)	Are batteries marked with date of installation and can dates be read without disturbing the batteries?	

	Control and indicating equipment/power supplies	✓
15.4(d)	Is the rating of the charger sufficient to recharge the batteries within the requirements of EN 54 part 4?	
15.4(e)	Is the battery capacity, as installed, adequate?	
16.2(b)	Is the wiring to any separate power supply equipment/battery enclosures of a suitable type?	
21.1.2(c6)	Have the quiescent and alarm currents been verified at commissioning?	
21.1.2(c6)	Have the quiescent and alarm currents been verified for additional PSUs?	

	Radio-linked fire detection systems	✓
15.2/15.4	Do power supplies for radio EACIE meet the recommendations of Clause 15?	
17.2(a)	Do components comply with BS EN 54-25:2008?	
17.2(b.1)	Are all radio-linked components supplied from at least two independent power supplies?	
17.2(c)	Has the system design allowed for at least an additional 20% increase in the number of radio-linked devices?	
17.2(e)	Are antennae cables monitored for open and short circuit conditions?	
17.2(i)	Do commissioning records include information relating to the system coding and details of the received signal levels for all radio devices and the background noise level?	
17.2(k)	Are records of signal levels kept on site with the system log book?	

	Workmanship	✓
20.2.2	Does the cable installation in general meet the recommendations of BS 8629?	
20.2.2(a)	Does the system conform to BS 7671 (as far as can be ascertained)?	
20.2.2(b)	Are cables securely fixed at the correct intervals with fire-resistant fixings and are they supported above suspended ceilings?	
20.2.2(k)(l)	Are cable holes fire stopped?	

	Documentation	✓
20.3.2(d)	Are test results for circuit parameters such as loop continuity available and satisfactory?	
21.1.2(c)	Are there satisfactory commissioning records?	
21.2.2(b)	Have suitable user instructions/manuals been provided to the customer?	
21.2.2(c)	Have as-fitted drawings been provided to the customer?	
21.2.2(d)	Have all long-term maintenance consumables been itemised and included in handover pack?	
21.2.2(e)	Has a logbook been provided to the customer?	
21.2.2(f)	Is there a record of agreed variations?	
21.3.2(a)(b)	Have BS 8629 certificates for design, installation, commissioning and acceptance been issued? (as applicable)	

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