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1. INTRODUCTION

Repeater panels are mentioned in BS 5839-1, but there is currently no product standard for a repeater panel. Many manufacturers use the standard for CIE as a guide, but much of BS EN 54-2 is not applicable for a typical repeater and some products on the market do not comply with BS EN 54-2.

In the long term it is hoped that CEN TC72 WG7 will develop a subset of EN 54-2 to create a product standard and when that exists, BS 5839-1 could be amended or the FIA could draft a further guide to ensure that appropriate products are specified in the various applications where repeaters are needed.

This guide is intended to assist manufacturers in the development of a product specification and specifiers in the development of an application specification or in the selection of suitable products.

2. DEFINITIONS

**Repeater Panel** – Part of the control and indicating equipment installed in a building that duplicates some or all indications and may also duplicate some or all controls of the CIE at a location remote from the CIE.

The indications on the repeater panel may take the form of light emitting indicators, an alpha-numeric display or a mimic diagram or a combination of these.

**Mimic Diagram** – BS 5839-1:2017 Clause 3.38 – topographic representation of the protected premises and their subdivisions, using light-emitting indicators for each subdivision such that the indicators of the fire detection and alarm system can be rapidly related to the layout of the premises.

**Mimic Repeater** – A repeater panel where the indications are of the form of a Mimic Diagram.

3. COMMENTARY

Repeater panels may be used where a building has several entrances or where the siting of the CIE near an entrance is considered vulnerable or in other parts of the building where fire alarm information or control is required.

Repeater Panels may be used to provide indications and or control:

- in the same format as the CIE, or
- in a specific format, for example a mimic repeater, or
- in a simplified format where only a subset of the information and control is needed, for example for events in one building of a large site.
- full or limited control, such as only acknowledge and reset.
Where any function on a repeater panel is critical to the safety of the building or its occupants, it is necessary that a single transmission path fault does not affect its operation.

Repeater panels may be provided for specific groups of people, such as the Fire and Rescue Service (FRS) or specially trained staff, or for people who have no special training.

Repeater panels may have an internal power supply or may be depend on the CIE to provide their power as well as the information that they display. Generally, a repeater panel power supply is only sufficient for its own power requirements and does not provide power to other parts of the system.

Where the repeater panel is to be used instead of the CIE, it should incorporate all of the controls and indications that are required for the user (see Appendix A and B). For example, sound alarms, silence alarms, reset and disablement controls and indications, fault indications from the alarm routing equipment etc.

4. RECOMMENDATIONS

4.1 The following recommendations are applicable.

a) There should be no falsification of indication, e.g. zone and other designations should be consistent with those of the CIE.

b) Indications should be provided at access level 1 and controls at access level 2 as defined in EN 54-2.

c) Where limited indication is provided on the repeater panel, information should be available adjacent to the repeater panel explaining where more detailed information is available, e.g. at the CIE.

d) The repeater panel should comply with the recommendations of BS 5839–1 clause 23.

e) Where system information is filtered, there should be a clear indication of what information is available at the repeater panel and where more detailed information is available. e.g. at the CIE.

f) Where a repeater panel has its own power supply, it should conform to EN 54-4.
4.2 The following recommendations are applicable for repeater panels intended to be used by the FRS.

a) A zone plan (see BS 5839-1 clause 3.68) related to the area covered by the repeater panel should be provided adjacent to the repeater panel for the use of FRS, who might not be familiar with the building, unless the zone plan is provided as part of a mimic repeater.

b) A single transmission path fault should not affect the operation of the repeater panel.

4.3 The following recommendations are applicable for repeater panels intended to be used by the specially trained staff.

a) A zone plan (see BS 5839-1 clause 3.68) related to the area covered by the repeater panel should be provided adjacent to the repeater panel unless the zone plan is provided as part of a mimic repeater or if it is considered that the staff are able to identify the location of all events without the use of a zone plan.

b) A single transmission path fault should not affect the operation of the repeater panel. If this is not provided, a fault indication should warn the user that indications may not be present, and that alternative means of system operation need to be used.

4.4 The following recommendations are applicable for repeater panels intended to be used by people with no special training.

a) A zone plan (see BS 5839-1 clause 3.68) related to the area covered by the repeater panel should be provided adjacent to the repeater panel unless the zone plan is provided as part of a mimic repeater.
5. APPENDIX A – INDICATIONS THAT MAY BE PROVIDED BY A REPEATER

- Fire alarm indicator
- Indications for each zone in alarm
- Indication of transmission of output signals to fire alarm routing equipment
- Indication of transmission of output signals to fire protection equipment
- Fault warning indicator
- Indications for each zone in fault
- Indications for other faults
- Indications for disablement of zones
- Indications for zones in test
- Indications for disablement of outputs to fire alarm devices
- Indication of disablement of output to fire routing equipment
- Indication of disablement of outputs to fire protection equipment
- Indication for other disablements

6. APPENDIX B – CONTROLS THAT MAY BE PROVIDED BY A REPEATER

- Silencing of the audible indication
- Reset of the fire alarm condition
- Silencing and re-sounding of the fire alarm devices
- Operation of the evacuate signal
- Note that provision of this control would make the transmission path to the CIE part of the Critical Signal Path as defined in BS 5839-1
- Disablement and re-enablement of zones
- Disablement and re-enablement of outputs to fire alarm devices
- Disablement and re-enablement of fire alarm routing equipment
- Disablement and re-enablement of output signals to fire protection equipment
- Enable access level 2, as defined in EN54-2

7. APPENDIX C – REFERENCES IN BS 5839-1 TO REPEAT CONTROL AND INDICATING EQUIPMENT

- Clause 12.2.1 a)8.
- Clause 23.1
- Clause 23.2.1 Note 1 and Note 2
- Clause 45.4 q) and Note 12