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Method for assessment of fire integrity of cast resin busbar trunking systems for the safety critical power distribution to life safety and fire fighting systems

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Publishing and copyright information

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 12, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 April 2013. It was prepared by Technical Committee FSH/1, *Fire safety cables*. A list of organizations represented on this committee can be obtained on request to its secretary.

Relationship with other publications

The test method given in this British Standard is based on the furnace method for which general requirements are given in BS EN 1363-1.

Information about this document

The purpose of this test method is to measure the ability of a cast resin busbar trunking system to maintain circuit integrity to life safety and fire fighting systems when exposed to fire.

The test method given in this British Standard has a test duration of 120 min which is considered to be the fire resistance period necessary for life safety and fire fighting applications when applied to busbar trunking distribution systems.

It is emphasized that fire tests do not assess a fire hazard, nor can the results of fire tests alone guarantee safety. They only provide information to assist in the assessment of the suitability of a cast resin busbar trunking for a given application.

Hazard warnings

WARNING. This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.
The test given in this British Standard might involve the use of dangerous voltages and temperatures. Suitable precautions should be taken against the risk of shock, burning, fire and explosion that might be involved and against any noxious fumes that might be produced.

Use of this document

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its methods are expressed as a set of instructions, a description, or in sentences in which the principal auxiliary verb is “shall”.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This British Standard gives a method for assessment of the fire integrity of cast resin busbar trunking systems for the safety critical power distribution to life safety and fire fighting systems, intended to maintain circuit integrity when exposed to fire. It is applicable to cast resin busbar trunkings of rated voltage not exceeding 1 000 V a.c.

NOTE Busbar trunking systems are specified in BS EN 61439-6:2012.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 8491:2008, *Method for assessment of fire integrity of large diameter power cables for use as components for smoke and heat control systems and certain other active fire safety systems*

BS EN 1363-1:1999, *Fire resistance tests – Part 1: General requirements*

BS EN 60584-1:1996, *Thermocouples – Part 1: Reference tables*

BS EN 61439-6:2012, *Low-voltage switchgear and controlgear assemblies – Part 6: Busbar trunking systems (busways)*

BS EN ISO 13943:2010, *Fire safety – Vocabulary*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in BS EN 1363-1:1999, BS EN 61439-6:2012 and BS EN ISO 13943:2010 apply.

4 Apparatus

4.1 *Test equipment*, as specified in BS EN 1363-1:1999, Clause **4**, including the equipment specified in **4.2** to **4.4**.

4.2 *Furnace*, capable of subjecting the busbar trunking assembly under test to the standard heating and pressure conditions specified in BS EN 1363-1 and suitable for testing a busbar trunking assembly comprising both a vertical and a horizontal section of busbar trunking as shown in Figure 1. The furnace shall be of sufficient size to accommodate the minimum dimensions of the test specimen comprising the components detailed in Clause **5** and as illustrated in Figure 1. The furnace shall have an opening in the roof for the vertical section of the busbar trunking and an opening in the wall for the horizontal section of the busbar trunking.

4.3 *Six thermocouples*, comprising plate type thermometers, type K as defined in BS EN 60584-1:1996 (see Figure 2), to provide a continuous indication of the temperature at key points within the furnace (see **6.2**).

4.4 *Equipment for measuring and recording furnace pressure,* as specified in BS EN 1363-1:1999, Clause **4**.