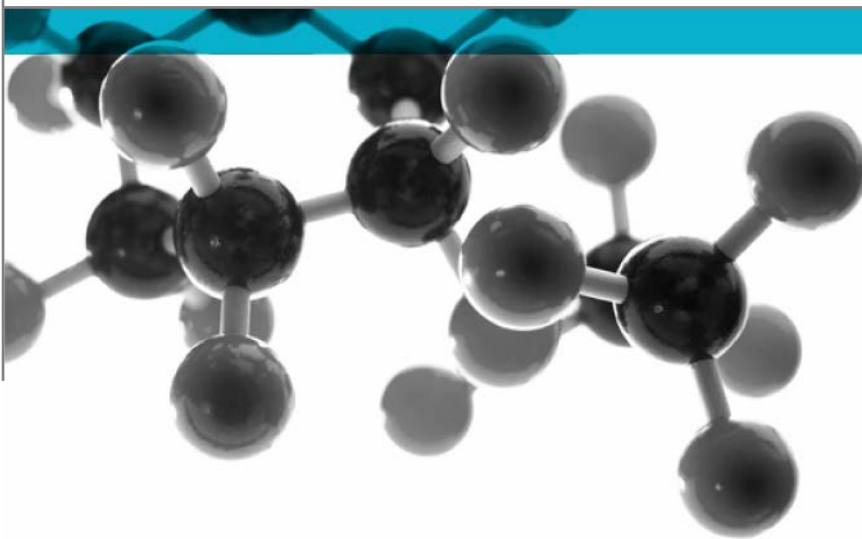


BS EN 50200: 2015



Method of test defined in BS EN 50200: 2015 for determining the resistance to fire of unprotected small cables for use in emergency circuits

A Report To: Berica Cavi S.P.A

Document Reference: 417735

Date: 8th October 2019

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Executive Summary

Objective To determine the performance of the following cable when it is tested in accordance with BS EN 50200: 2015.


Generic Description	Product reference	Diameter / thickness / c.s.a	Weight per unit length / density
Cable for fire detection sensors	"Eurosaflex"	8.70 ± 0.3mm	110kg/km
Individual components used to manufacture composite:			
Outer sheath	Unwilling to provide	Unwilling to provide	1.50kg/dm ³
Electrostatic screen	Unwilling to provide	Unwilling to provide	Unwilling to provide
Drain wire	Unwilling to provide	0.5mm ²	Unwilling to provide
Clear tape	Unwilling to provide	Unwilling to provide	Unwilling to provide
Conductor insulation	Unwilling to provide	Unwilling to provide	1.50kg/dm ³
Mica tape	Unwilling to provide	Unwilling to provide	170g/m ²
Conductors	Unwilling to provide	1.50mm ²	Unwilling to provide
Please see page 5 of this test report for the full description of the product tested			

Test Sponsor Berica Cavi S.P.A, Via Della Meccanica 2, 36040 Meledo di Sarego, Vicenza, Italy.


Test Results: When tested in accordance with BS EN 50200: 2015 in relation to the requirements for PH120 classification, at a rated voltage of 600/1000V, the cable meets the criteria for resistance to fire with mechanical shock.

Date of Test 23rd September 2019

Signatories



Responsible Officer
C. Jacques *
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Authorised
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Business Unit Head

* For and on behalf of [Warringtonfire](#).

Report Issued: 8th October 2019

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Test Details

Purpose of test	To determine the performance of specimens of a cable when they are subjected to the conditions of test specified in BS EN 50200: 2015. The purpose of the test method is to determine whether a cable can maintain circuit integrity when it is exposed to the fire conditions described within the method.
Scope of test	<p>BS EN 50200: 2015 specifies a test method for cables intended for use as emergency circuits for alarm, lighting and communication purposes. It is applicable to cables whose rated voltage does not exceed 600/1000V and overall diameter does not exceed 20mm.</p> <p>The test method, which is based on the direct impingement of a nominal 842°C flame together with the application of a mechanical shock, can be used for cables that are required to comply with sub-clause 4.3.1.4.6(a) of the Interpretative Document for Essential Requirement No.2, Safety in Case of Fire, (94/C62/01) of the Construction Products Directive (89/106/EEC).</p> <p>Annex D of BS EN 50200: 2015 provides guidance as to the derivation of the fire resistance classifications from the test data.</p>
Fire test study group/EGOLF	Certain aspects of some fire test specifications are open to different interpretations. The Fire Test Study Group and EGOLF have identified a number of such areas and have agreed Resolutions which define common agreement of interpretations between fire test laboratories which are members of the Groups. Where such Resolutions are applicable to this test they have been followed.
Instruction to test	The test was conducted on the 23 rd September 2019 at the request of Bercia Cavi S.P.A, the sponsor of the test.
Provision of test specimens	The specimens were supplied by the sponsor of the test. Warringtonfire was not involved in any selection or sampling procedure.
Conditioning of specimens	<p>The specimens were received on the 12th August 2019.</p> <p>Prior to the test the specimens were conditioned to constant mass in an atmosphere having a temperature of $23 \pm 2^{\circ}\text{C}$ and a relative humidity of $50 \pm 5\%$.</p>
Burner verification procedure	<p>The verification procedure for the burner was conducted in accordance with Section 7 of BS EN 50200: 2015 at the start of the test day. Temperature measurements recorded by each thermocouple were logged using an Omega 'HH1384' four channel thermometer and datalogger at 1 second intervals over a period of 10 minutes and then averaged. This determined the gas & air flow rates and the position of the burner that were used for the subsequent cable test.</p> <p>The gas and air flows were provided through the use of M&W Instruments mass flow controllers, model numbers 'D-6341-DR' and 'D-6361-DR'.</p>

**Specimen
mounting details**

The cable specimens were mounted onto 9mm thick non-combustible 'Supalux' backing boards in accordance with Section 8.2 and Figure 8 of BS EN 50200: 2015, using appropriately sized earthed copper 'P' clips.

Description of Test Specimens

The description of the system given below has been prepared from information provided by the sponsor of the test. This information has not been independently verified by Warringtonfire. All values quoted are nominal, unless tolerances are given.

General description		Cables for fire detection sensors
Product reference of composite		“Eurosafeflex”
Name of manufacturer of composite		Berica Cavi S.p.a.
Diameter of composite		8.70 ± 0.30 mm (stated by sponsor) 8.92mm (determined by Warringtonfire)
Weight per unit length of composite		110kg/km (stated by sponsor) 93.6kg/km (determined by Warringtonfire)
Cable marking		BERICA CAVI S.P.A. ITALY EUROSAFE FLEX 2x1.50 0.6/1 kV EN 50200 (PH120) (FE180) IEC 60332-3-24 CE Year/Lot
Number of cores x core size		2 x 1.50 mm ²
Voltage rating		0.6/1kV
Outer sheath	Generic type	LSZH compound See Note 1 Below
	Product reference	See Note 1 Below
	Colour	“Red”
	Thickness	See Note 1 Below
	Density	1.50kg/dm ³
	Flame retardant details	See Note 1 Below
	Name of manufacturer	See Note 1 Below
Electrostatic screen	Generic type	Aluminium / polyester tape
	Product reference	See Note 1 Below
	Thickness	See Note 1 Below
	Density	See Note 1 Below
	Name of manufacturer	See Note 1 Below
	Flame retardant details	See Note 1 Below
Drain wire	Generic type	Annealed tinned copper
	Product reference	See Note 1 Below
	Cross-sectional area	0.50mm ²
	Density / weight per unit area	See Note 1 Below
	Name of manufacturer	See Note 1 Below

Continued on next page

Clear tape (surrounding the two conductors)	Generic type	Polyester tape
	Product reference	See Note 1 Below
	Colour	"Transparent"
	Thickness	See Note 1 Below
	Density / weight per unit area	See Note 1 Below
	Name of manufacturer	See Note 1 Below
Conductor insulation	Generic type	LSZH compound See Note 1 Below
	Product reference	See Note 1 Below
	Colour	"Red – Black"
	Thickness	See Note 1 Below
	Density	1.50kg/dm ³
	Flame retardant details	See Note 1 Below
	Name of manufacturer	See Note 1 Below
Tape	Generic type	Mica tape
	Product reference	See Note 1 Below
	Colour	"White"
	Thickness	See Note 1 Below
	Weight per unit area	170g/m ²
	Name of manufacturer	See Note 1 Below
	Flame retardant details	See Note 1 Below
Conductors	Generic type	Annealed red copper Cl. 5
	Product reference	See Note 1 Below
	Total cross-sectional area of each conductor	1.50mm ²
	Weight per unit length per strand	See Note 1 Below
	Number of strands per conductor	See Note 1 Below
	Name of manufacturer	See Note 1 Below
Brief description of manufacturing process		See Note 1 Below

Note 1: The sponsor of the test was unwilling to provide this or further information.

The description of the specimens as given above is not as detailed as would usually be the case for descriptions included in [Warringtonfire](#) test reports and the description may not fully comply with the requirements of the test standard. In all other respects however the tests were conducted fully in accordance with the requirements of the test standard and the test results are valid.

Test Results

Results of test

When two specimens of the cable were tested in accordance with the procedure specified in BS EN 50200: 2015, for a period of 120 minutes at a temperature of $(830 +40 -0) ^\circ\text{C}$ and a rated voltage of 600/1000Vrms, both cable specimens maintained their circuit integrity and consequently satisfied the performance requirements specified in the Interpretative Document No. 2 of the Construction Products Directive in relation to the requirements for a PH120 classification.

Applicability of test result

The test results relate only to the specimen of the cable in the form in which it was tested. Small differences in the composition of the product may significantly affect the performance during the test and may therefore invalidate the test results. Care should be taken to ensure that any product, which is supplied or used, is fully represented by the specimen, which was tested.

Conclusion

When tested in accordance with BS EN 50200: 2015 in relation to the requirements for PH120 classification, at a rated voltage of 600/1000V, the cable meets the criteria for resistance to fire with mechanical shock.

Validity

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over five years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

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Revision History

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