

test report



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

WF Report Number

177606

Date:

14th November 2008

Test Sponsor:

FTC – Fabbrica Trentina
Conduttori Srl

Bodycote warringtonfire Test Report No. 177606

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

Sponsored By

**FTC - Fabbrica Trentina Conduttori Srl
Sud Tirol Kabelwerke
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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: 2006. 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 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 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 5 th & 6 th November 2008 at the request of FTC – Fabbrica Trentina Conduttori Srl, the sponsor of the test.
Provision of test specimens	The specimens were supplied by the sponsor of the test on the 6 th October 2008. Bodycote warringtonfire was not involved in any selection or sampling procedure.

Description of Test Specimens

The description of the specimens given below has been prepared from information provided by the sponsor of the test. All values quoted are nominal, unless tolerances are given.

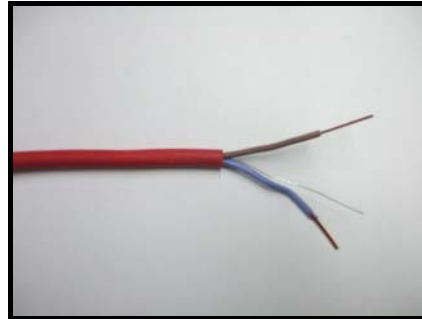


Plate 1 – Photograph of test specimen

Product reference		"Eurosafte FE 180"
Cable marking		"EUROSAFE FE 180 2G1.5 SCR. FIRE RESISTANT BS6387 CWZ, EN 50200 PH 120, EN 60332-1-2, EN 61034-2, FIPEC(EN)50339-2-1 CE 09/08"
Cable function		Fire system connections
Number of cores x core size		2 x 1.5mm ²
Voltage rating		300/500V
Overall diameter		9.3mm (stated by sponsor) 8.0mm (determined by Bodycote warringtonfire)
Overall weight per unit length		77.52kg/km (stated by sponsor)
Conductors	Product reference	"Solid Plain Annealed Copper Wire"
	Generic type	Solid copper wire
	Name of manufacturer	See Note 1 below
	Cross sectional area	1.5mm ²
	Weight per unit length	13.52kg/km
Insulation	Product reference	"Special Silicone Rubber"
	Generic type	Silicone rubber
	Name of manufacturer	FTC – Fabbrica Trentina Conduttori Srl
	Colour	"Blue" and "Brown"
	Thickness	0.8mm
	Weight per unit length	22.6kg/km
	Flame retardant details	See Note 1 below
Drain wire	Product reference	"Solid Tinned Copper Wire"
	Generic type	Solid tinned copper wire
	Name of manufacturer	See Note 1 below
	Cross sectional area	0.28mm ²
	Weight per unit length	2.5kg/km
Plastic tape (surrounding conductors)	Product reference	"Polyester Foil"
	Generic type	Polyester tape
	Name of manufacturer	See Note 1 below
	Colour	"Neutral"
	Thickness	25µm
	Density / weight per unit length	See Note 1 below
	Flame retardant details	See Note 1 below

Continued on next page

Foil tape (surrounding conductors and plastic tape)	Product reference	"Aluminium / Polyester Laminate Tape"
	Generic type	Aluminium / polyester
	Name of manufacturer	See Note 1 below
	Colour	"Blue / Silver"
	Thickness	25µm
	Density / weight per unit length	See Note 1 below
	Flame retardant details	See Note 1 below
Outer sheath	Product reference	"Special Halogen Free LSZH"
	Generic type	Low smoke zero halogen See Note 1 below
	Name of manufacturer	FTC – Fabbrica Trentina Conduttori Srl
	Colour	"Red"
	Thickness	1mm
	Weight per unit length	33.32kg/km
	Flame retardant details	See Note 1 below
Brief description of manufacturing process		The conductor wires are insulated by extrusion of a continuous silicone rubber layer, which has been high temperature cross-linked. The cores are then twisted together and shielded. Finally, the sheathing is applied by a semi-compression extrusion process.

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

The cable specimens were mounted onto 9mm thick non-combustible backing boards in accordance with Section 8.2 and Figure 8 of BS EN 50200, using appropriately sized earthed copper 'P' clips. The sponsor declared the minimum bending radius of the cable to be 10 times the diameter of the cable and the specimens were mounted accordingly.

Test Results

Results of test The test results relate only to the behaviour of the specimens of the cable under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire hazards of the product in use.

When two specimens of the cable were tested in accordance with the procedure specified in BS EN 50200: 2006, for a period of 120 minutes at a temperature of $(830 +40 -0) ^\circ\text{C}$ and a rated voltage of 500V-rms, 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 PH 120 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: 2006 in relation to the requirements for PH120 classification, 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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Signatories


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* For and on behalf of **Bodycote warringtonfire**.

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