test report

Bodycote

BS EN 61034-2: 2005

Measurements Of Smoke Density Of Electric Cables

WF Report Number

177601

Date:

17th November 2008

Test Sponsor:

FTC – Fabbrica Trentina Conduttori Srl

warringtonfire global safety

TESTING

UKAS TESTING

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Bodycote warringtonfire

Test Report No. 177601

BS EN 61034-2: 2005
Measurements Of Smoke Density
Of Electric Cables Burning
Under Defined Conditions

Sponsored By

FTC - Fabbrica Trentina Conduttori Srl
Sud Tirol Kabelwerke
Via Pineta 21B
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Test Details

Purpose of test

To determine the performance of a specimen of a cable when it is subjected to the conditions of the test specified in BS EN 61034-2: 2005: "Measurement of smoke density of electric cables burning under defined conditions".

The test was performed in accordance with the procedure specified in BS EN 61034-2: 2005 and this report should be read in conjunction with that Standard.

Scope of test

BS EN 61034-2: 2005, details a method of test for the measurement of the density of smoke emitted from electric cables burning under the defined conditions of the test. The result is expressed as percentage light transmittance and is used to determine compliance with the criterion given in Section 7 of the Standard.

Instruction to test

The test was conducted on the 6th 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 6th October 2008. **Bodycote warringtonfire** was not involved in any selection or sampling procedure.

Conditioning of specimens

The specimens were conditioned at temperatures of 23 ± 2°C for a minimum period of 16 hours.

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.

Product reference		"Eurosafe E 30/60"
Cable marking		"EUROSAFE E 30/60 JE-H(ST)H 2x2x0.8 MM SCR. FIRE RESISTANT VDE 0815, DIN 4102, EN 50200 PH 120, EN 60332-1-2, EN 61034-2, FIPEC(EN)50339-2-1 CE 09/08"
Cable function		Fire systems data connections
Number of cores x core size		4 x 0.8mm^2
Voltage rating		300/500V
Overall diameter		8.2mm (stated by sponsor) 8.3mm (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	0.8mm^2
	Weight per unit length	4.2kg/km
Insulation	Product reference	"Special Silicone Rubber"
	Generic type	Silicone rubber
	Name of manufacturer	FTC – Fabbrica Trentina Conduttori Srl
	Colour	"Yellow", "Grey", "Blue" and "Red"
	Thickness	0.6mm
	Weight per unit length	8.6kg/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
Glass fibre tape (surrounding conductors	Product reference	"Glass Fibre"
	Generic type	Glass fibre tape
	Name of manufacturer	**See Note 1 below**
	Colour	"White"
	Thickness	0.12mm
	Density / weight per unit length	**See Note 1 below**
	Flame retardant details	**See Note 1 below**
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	**See Note 1 below**
	Colour	"Red"
	Thickness	1mm
	Weight per unit length	39.6kg/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 separated into pairs, 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.

Test Results

Applicability of test results

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

The test results relate only to the specimens of the product in the form in which they were tested. Small differences in the composition or thickness of the product may significantly affect the performance during the test and will therefore invalidate the test results. It is the responsibility of the supplier of the product to ensure that the product, which is supplied, is identical with the specimens, which were tested.

This test result alone does not assess the fire hazard of the material, or a product made from this material, under actual fire conditions. Consequently, the results of this test alone are not to be quoted in support of claims with respect to the fire hazard of the material or product under actual fire conditions. The results when used alone are only to be used for research and development, quality control and material specifications.

Outcome of test

Two specimens were tested.

Visual observations made during the test are given in Appendices 1 and 2.

The changes in light transmittance with time were continuously recorded and graphs are presented in Figures 1 and 2.

The light transmittance was recorded and the minimum values were determined to be:

Specimen No	Minimum light transmittance (%)
1	83.6
2	85.5

Average minimum light transmittance 84.6%

Conclusion

The requirement shall be given in the relevant cable specification. However, if no value is given in the relevant cable specification, it is recommended that a minimum value of 60% is adopted.

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.

Signatories

Responsible Officer
S. Harris *

Approved
T. Mort *
Senior Technical Officer

Authorised
C. Dean *
Operations Manager

* For and on behalf of **Bodycote warrington**fire.

Report Issued: 17th November 2008

Appendix 1

Observations during test – Specimen No. 1

00:01 Ignition of fire source, test commenced.

01:30 The specimen ignited and intermittent flaming was visible on the surface of the specimen.

02:45 The flaming increased in intensity.

10:00 No change, the specimen continued to burn.

11:20 All flaming on the surface of the specimen ceased.

20:00 No change.

30:00 No change.

33:14 Fire source consumed. All flaming ceased.

40:00 Test terminated.

Appendix 2

Observations during test – Specimen No. 2

00:01 Ignition of fire source, test commenced.

01:03 The specimen ignited and intermittent flaming was visible on the surface of the specimen.

02:00 The flaming increased in intensity.

10:00 No change, the specimen continued to burn.

11:15 All flaming on the surface of the specimen ceased.

20:00 No change.

30:00 No change.

32:10 Fire source consumed. All flaming ceased.

40:00 Test terminated.

Figure 1

Variation of Light Transmittance With Time- Specimen No. 1

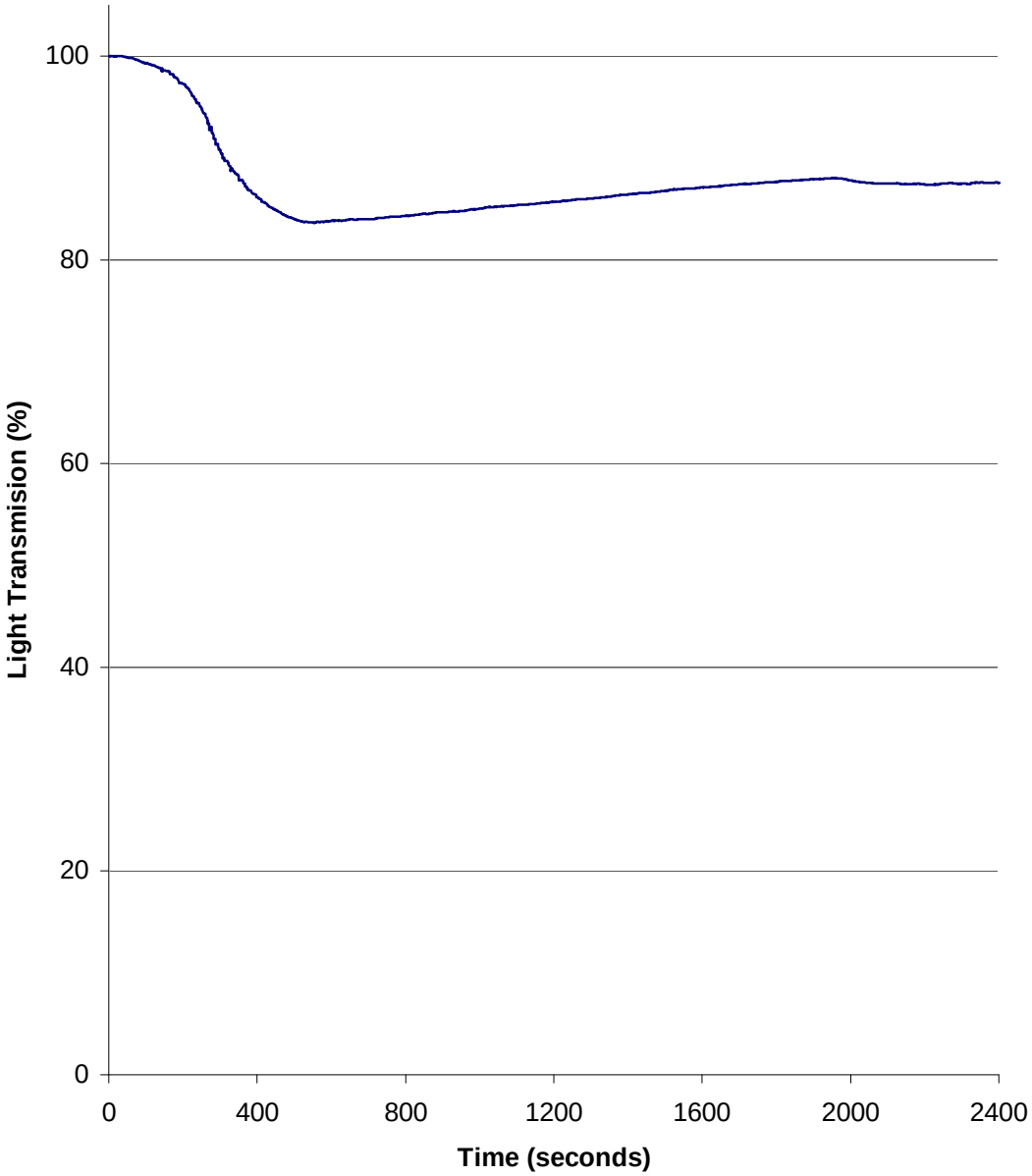

Figure 2

Variation of Light Transmittance With Time- Specimen No. 2