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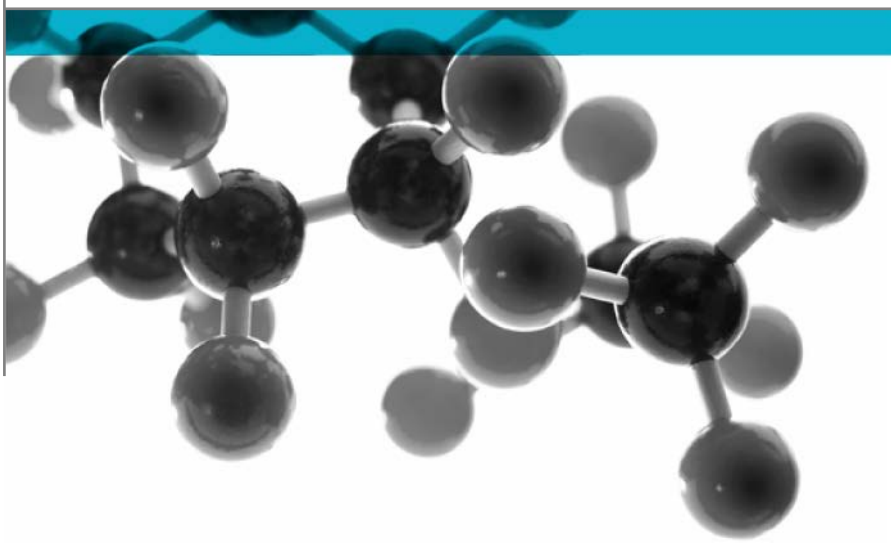
# Ad-hoc BS 5839-1: 2017 Section 26.2 e)



**Ad-hoc investigation to determine the fire performance of a steel cable clip, using the principles of BS 5839-1: 2017 Section 26.2 e)**

A Report To: Deligo Limited

Document Reference: 405047

**Date:** 9th October 2018

**Issue No.: 1**



Testing
Advising
Assuring

Registered Office: Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian EH28 8PL United Kingdom. Reg No.SC 70429
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# Executive Summary

**Objective** To determine the fire performance of a (product), using the principles of BS 5839-1: 2017 Section 26.2 e)

| Generic Description | Product reference | Thickness | Weight |
|---|---|---|---|
| Mild steel cable clip | "SBW" | 0.85mm | 2.2kg per 100 units |
| **Please see pages 6 & 7 of this test report for the full description of the product tested** | | | |

**Test Sponsor** Deligo Limited, Unit 17 Narrow Boat Way, Dudley. DY2 0XQ

**Test Results:** **The steel cable clip remained in place throughout the test, and maintained adequate support for the cable for the duration of the test.**

**When tested using the general principles of BS 5839-1 Section 26.2 e), the cable maintained its integrity for the duration of the test.**

**Date of Test** 26th and 27th September 2018

# Signatories

| | |
|---|---|
| Responsible Officer<br>I. White *<br>Testing Officer | Authorised<br>S. Deeming *<br>Business Unit Head |

* For and on behalf of **Exova Warringtonfire**.

Report Issued: 9th October 2018

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# Test Details

**Introduction**

The sponsor, Deligo Limited, approached **Exova Warringtonfire** and requested that a series of tests be conducted to demonstrate that their steel cable clip complies with the requirements of BS 5839-1: 2017.

Section 26.2 e) of BS 5839-1: 2017 states:-
"Methods of cable support should be such that circuit integrity will not be reduced below that afforded by the cable used, and should withstand a similar temperature and duration to that of the cable, while maintaining adequate support".

In order to demonstrate that the steel cable clip meets the above requirements, it was used in conjunction with (e.g. standard cable) whilst they were exposed to the test conditions given in BS 5839-1: 2017 Section 26.2 e).

**Purpose of test**

To determine the performance of steel cable clip when it is subjected to the conditions of test specified in BS 5839-1: 2017, Section 26.2 e) and hence to demonstrate that it meets the requirements specified in Section 26.2 f). The purpose of the test methods are to determine whether a cable can maintain circuit integrity when it is exposed to the fire conditions described within the methods.

The tests were performed using the general principles of the procedures specified in BS 5839-1: 2017 Section 26.2 e), BS EN 50200: 2015 and BS 8434-2: 2003 + A2 2009 and this report should be read in conjunction with those standards.

**Scope of test**

Section 26.2 e) of BS 5839-1 describes two methods of test for standard fire resisting cables :-

a) The cable should meet the PH 120 classification when tested in accordance with BS EN 50200: 2015.

The PH 120 classification for the continuity of power supply is defined in the Interpretative Document No. 2 of the Construction Products Directive. Two results in which the measured duration of survival equals or exceeds the stated classification (i.e. 120 minutes) are needed to obtain the classification.

And

b) The cable should maintain circuit integrity when exposed to the following test:

'A sample of the cable is simultaneously exposed to a flame at a temperature of 930 (+40 -0°C) and mechanical shock for 60 minutes, followed by simultaneous exposure to water spray and mechanical shock for a further 60 minutes.'

Compliance with this requirement is demonstrated using the test method described in BS 8434-2: 2003 + A2 2009.

**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 tests were conducted on the 26th and 27th September 2018 at the request of Deligo Limited, the sponsor of the test.

**Provision of test specimens**

The specimens were supplied by the sponsor of the test. **Exova Warringtonfire** was not involved in any selection or sampling procedure.

**Conditioning of specimens**

The specimens were received on the 21st September 2018.

Prior to the test the specimens were conditioned for at least 16 hours in an atmosphere having a temperature of 23 ± 2°C and a relative humidity of 50 ± 5%.

**Form in which the specimens were tested**

The steel cable clip was mounted to a nominally 10mm thick calcium silicate backing board and used the standard cable supplied and described below.

# 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.

| | | | |
|---|---|---|---|
| General description | | | Mild steel cable clip |
| Cable clip | Detailed description | | Steel saddle for conduit |
| | Product reference | | "SBW" |
| | Name of manufacturer | | **See Note 1 Below** |
| | Thickness | | 0.85mm (stated by sponsor)<br>0.8mm (determined by **Exova Warringtonfire**) |
| | Weight | | 2.2kg per 100 pieces |
| | Colour reference | | "White powder coated" |
| | Flame retardant details | | This component is inherently flame retardant |
| Brief description of manufacturing process | | | Pressed, drilled, assembled and plated |
| **The clips were fixed to a calcium silicate backing board and used to hold the following cable in place** | | | |
| Cable | General description | | Fire cable |
| | Product reference of cable | | "VFP-410 ERH" |
| | Name of manufacturer of cable | | Ventcroft Limited |
| | Diameter of cable | | 8.2mm (stated by sponsor)<br>9.04mm (determined by **Exova Warringtonfire**) |
| | Weight per unit length of cable | | 10.9kg/100m (stated by sponsor)<br>10.54 kg/100m (determined by **Exova Warringtonfire**) |
| | Cable marking | | TF KABLE 3 FLAME-X 950 BASEC SERIES 2E ELECTRIC CABLE ENHANCED 120 2X1.5mm² + ECC 300/500V BS 7629-1 H BS 6387 CWZ LPCB 814b/01 2017 0439m |
| | Cable function | | Electric cable |
| | Number of cores x core size | | 2 x 1.5mm² |
| | Voltage rating | | 500v |
| | Cable configuration | | • Sheath<br>• Inner sheath<br>• Conductor insulation<br>• Conductors |
| | Sheath | Generic type | LSZH Thermoplastic fire cable sheathing |
| | | Product reference | "No Burn Platinum" |
| | | Name of manufacturer | Ventcroft Limited |
| | | Colour | "Red" |
| | | Thickness | **See Note 2 Below** |
| | | Weight per unit area | **See Note 2 Below** |
| | | Flame retardant details | **See Note 2 Below** |
| | Inner Sheath | Generic type | Polyurethane backed co-polymer aluminium foil |
| | | Product reference | "No Burn Platinum" |
| | | Name of manufacturer | Ventcroft Limited |
| | | Colour | "Grey/silver" |
| | | Thickness | **See Note 2 Below** |
| | | Weight per unit area | **See Note 2 Below** |
| | | Flame retardant details | **See Note 2 Below** |

Continued on next page

| | | | |
|---|---|---|---|
| Cable | Conductor insulation | Generic type | FR LSZH silicone insulation |
| | | Product reference | “No Burn Platinum” |
| | | Name of manufacturer | Ventcroft Limited |
| | | Colour | “Blue/Black/Grey/Brown” |
| | | Thickness | **See Note 2 Below** |
| | | Weight per unit area | **See Note 2 Below** |
| | | Flame retardant details | **See Note 2 Below** |
| | Conductors | Generic type | Copper |
| | | Product reference | “No Burn Platinum” |
| | | Name of manufacturer | Ventcroft Limited |
| | | Thickness | 1.0mm |
| | | Weight per unit area | **See Note 2 Below** |
| | | Flame retardant details | **See Note 2 Below** |

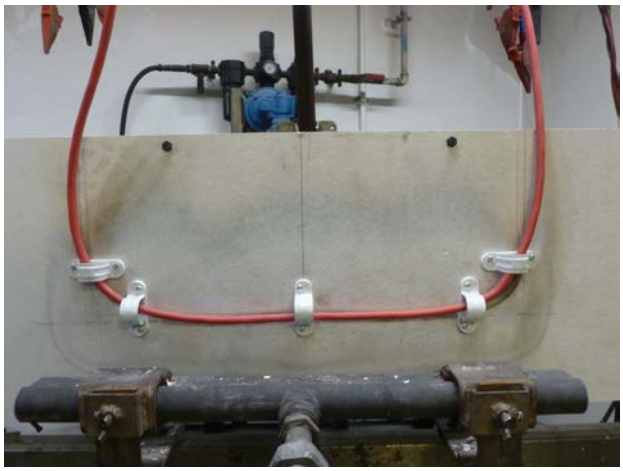
**Note 1: The sponsor was unwilling to provide this information.**

**Note 2: The sponsor was unable to provide this information.**

# Photographs of Test Specimens

Before test






After test


# Test Results

**Results**

BS EN 50200: 2015 (Resistance to fire with mechanical shock)

When two specimens of the steel cable clips were tested using the principles of the procedure specified in BS EN 50200: 2015, for a period of 120 minutes at a temperature of 830 (+40 –0) °C and a rated voltage of 500V-rms, both cable specimens maintained their circuit integrity. The steel cable clips remained in place and maintained adequate support for the cable for the duration of both tests.

BS 8434-2: 2003 + A2 2009 (Resistance to fire with mechanical shock and water spray)

When a specimen of the steel cable clip was tested using the principles of the procedure specified in BS 8434-2: 2003 + A2 2009, at a temperature of 930 (+40 –0) °C and a rated voltage of 500V-rms, the cable specimen maintained its circuit integrity. The steel cable clip remained in place and maintained adequate support for the cable for the duration of both tests.

**Conclusion**

**The steel cable clip remained in place throughout the test, and maintained adequate support for the cable for the duration of the test.**

**When tested using the general principles of BS 5839-1 Section 26.2 e), the cable maintained its integrity for the duration of the test.**

**Applicability of test result**

The test results relate only to the behaviour of the test specimens of the product under the particular conditions of test; they are not intended to be the sole criterion for assessing the potential fire 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 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 specimens which were tested.

**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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|---|---|
| Issue No : | Re-issue Date: |
| Revised By: | Approved By: |
| Reason for Revision: | |

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