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Test Report No: ICL/H15/4821

BS 7846:2009

Electric cables — 600/1000 V armoured fire-resistant cables having thermosetting insulation and low emission of smoke and corrosive gases when affected by fire

Clause 17.4.2 for Category F2

Sponsored By

Red Sea Cable Company
P.O Box 859
Riyadh: 11421
Kingdom of Saudi Arabia

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1 Purpose of Test

To carry out tests called up in BS 7846: 2000 Clause 17.4.2 Category F 2. This clause of BS 7846:2009 requires the following tests to be carried out:

1. The complete cable shall be tested in accordance with BS 6387:1994, D.2 and shall withstand 950 °C for 3 hours at a rated voltage of 600/1 000 V without rupture of the 3 A fuse or circuit breaker and with no loss of continuity.
2. Additionally, complete cables of a diameter not exceeding 20 mm, shall be tested in accordance with BS 6387:1994, D.3 and D.4 and shall conform to the requirements for category W and category Z at a rated voltage of 600/1 000 V. For complete cables of a diameter exceeding 20 mm the same requirements shall be met, subject to the additional provisions given in L.1.

2 Scope of Test

The tests called up in the standard are for determining the circuit integrity of the cable.

3 Description of Test Specimens

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

The product was a 4 core cable having an overall diameter of 34mm and consisting of 35mm² copper conductors, Mica tape, Cross linked Poly Ethylene (GP8) insulation. LSHF black bedding, Galvanised steel wire armour and black LSHF (LTS1) outer sheath.

The outer sheath of this cable was marked “RED SEA CABLES, KSA ELECTRIC CABLE 600/1000V BS 7846-F2 4 X 35 MM² CU/MICA/XLPE/SWA/LSHF FIREGUARD 2015 RED SEA CABLES, KSA ELECTRIC CABLE 600/1000V BS 7846 4 X 35MM² CU/MICA/XLPE/SWA/LSHF FIREGUARD 2015 0306M”.

The sponsor has provided a Technical data sheet relating to the cable and this is given in Annex 1.

The cable was supplied by the sponsor of the test on 13th May 2015.

4 Date of Test

The test was performed on 22nd and 26th May 2015

5 Test Procedure

The tests were carried out in accordance with the following standards and this report should be read in conjunction with tests test standards.

- BS 6387:1994, Clause D.2 “Resistance to Fire alone” at $950\pm 40^{\circ}\text{C}$ for three hours.
- BS 6387:1994 Clause D.3 “Resistance to fire with water” amended in accordance with the requirements given in BS 7846:2000 Clause 17.4.3 which requires that the cables with diameter $>20\text{mm}$ are testing in accordance with Annex L of BS 7846:2009
- BS 6387:1994 Clause D.4 “Resistance to fire and mechanical shock” amended in accordance with the requirements given in BS 7846:2000 Clause 17.4.3 which requires that the cables with diameter $>20\text{mm}$ are testing in accordance with Annex L of BS 7846:2009.

6 Test Results

The test results relate only to the behaviour of the specimen 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.

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.

6.1.1 BS 6387:1994, Clause D.2 “Resistance to Fire alone” at $950\pm 40^{\circ}\text{C}$ for three hours.

Test was carried out on 26th May 2015. The cable was exposed to the heating conditions ($950\pm 40^{\circ}\text{C}$ flame) for three hours. No fuse was ruptured during the test. Some flaming ash fell off between 15:56 second and 18:05 seconds.

6.1.2 BS 6387:1994, Clause D.4 “Resistance to Fire and mechanical shock” at 950⁰C.
Test was carried out on 22nd May 2015.

No fuse was ruptured during the test.

6.1.3 BS 6387:1994, Clause D.3 “Resistance to Fire and water” at 650 ± 40 °C.
Test was carried out on 22nd May 2015.

No fuse was ruptured during the test.

7 Conclusion

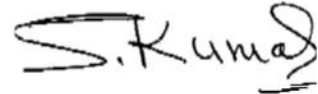
The cable tested satisfies the requirements given in BS 7846:2009 Clause 17.4.2 for Category F2 classification.

Prepared by

A handwritten signature in black ink, appearing to read "C. B. Chong".

**C. B. Chong
Fire Scientist**

Approved by

A handwritten signature in black ink, appearing to read "S. Kumar".

**S. Kumar
Technical Manager**

Date of Issue: 23rd June 2015