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Test Report No: ICL/H15/5440

IEC 60331-21 (1999-04)

Tests for electric cables under fire conditions - Circuit integrity

Part 21: Procedures and requirements – of rated voltage up to and including 0.6/1.0kV

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 determine the performance of a specimen of an optical fibre cable when it is subjected to the conditions of test specified in IEC 60331-21 (1999-04) Tests for electric cables under fire conditions - Circuit integrity - Part 21: Procedures and requirements – of rated voltage up to and including 0.6/1.0kV.

2 Scope of Test

IEC 60331-21 (1999-04) details a method of test to assess the resistance to flame of an optical fibre 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 single core cable having an overall diameter of 10.4mm and consisting of 35mm² copper conductors, Mica tape, and orange green and yellow coloured polymeric outer sheath.

The outer sheath of the cable was marked “RED SEA CABLES, KSA 450/750V BS 6387 BS EN 50525-3-41 35MM² HO7Z-R 2015 0039M”.

The sponsor of the test has not supplied additional information relating to the composition of the outer sheath or the mica tape used.

The cable was supplied by the sponsor of the test on 17th September 2015.

4 Date of Test

The test was performed on 26 November 2015.

5 Test Procedure

The test was performed in accordance with the procedure specified in IEC 60331-21 and this report should be read in conjunction with that Standard.

The cable was exposed to flames adjusted to 950^{+40}_{-0} °C.

5.1 Deviation from the standard

The standard specifies that a flame temperature of 750^{+40}_{-0} °C is used as an ignition source, but the temperature was set at 950^{+40}_{-0} °C at the sponsors request.

The cable submitted for test was a single core cable without another metallic component. The tests was carried out using two lengths of cable laid side by side such that the two were in close contact with each other at the start of the test.

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.

The results are given in the table below:

When tested in accordance with the procedure specified in IEC 60331-21 no fuse was ruptured during the 180 minute test duration nor any lamp was extinguished.

7 Conclusion

The cable submitted for test was a single core cable without another metallic component.

The standard states that this test can be applied to a single core cable that has another metallic component (see Clause 6.4). The sponsor of the test was informed of this limitation and the test detailed in this standard was carried out at the sponsor's explicit request. Two lengths were used.

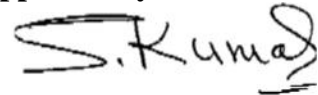
The results show that no fuse was ruptured and circuit integrity was maintained for the duration (3 hours) of the test when the cable was tested with the amendment detailed in Clause 5.1 of this report.

Prepared by

A handwritten signature in black ink, appearing to read "Chong", with a horizontal line underneath.

**C. B. Chong
Fire Scientist**

Approved by

A handwritten signature in black ink, appearing to read "S. Kumar", with a horizontal line underneath.

**S. Kumar
Technical Manager**

Date of Issue: 26th November 2015.