



Test Report

Report No	243/4829538	This Report consists of 9 pages
Client	National Cables Industry PO Box 27472 Sharjah United Arab Emirates	
Authority & date	Clients order dated 15 May 2006	
Items tested	1 sample of Electric Cable	
Specification	BS 6724:1997 Excluding clauses 6.3 and 11.3 spark test on Insulation and Oversheath	
Results	The sample submitted complied with the requirements of the Specification For the tests which were requested	
Prepared by	C R Mead 	Technician
Authorized by	C Yogarathnam 	Technical Engineer
Issue Date	14 September 2006	
Conditions of issue	This Test Report is issued subject to the conditions stated in current issue of PS082 'General conditions relating to acceptance of testing'. The results contained herein apply only to the particular sample/s tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of the Managing Director, BSI Product Services, who reserves the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.	



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1) Introduction

This report relates to tests conducted on a sample of Electric cable submitted by National Cables Industry, Sharjah, United Arab Emirates.

This report applies only to the particular sample tested and to the specific tests carried out and detailed within the report. It does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of this or any related products.

2) Samples

The client submitted one sample of Electric cable described as follows:-

4x16 mm² Black sheath

3) Testing

The sample submitted was subjected to the tests specified in BS 6724:1997 Excluding clauses 6.3, 11.3 spark testing of insulation, oversheath, this test is in the final stage of manufacture. Flame propagation on multiple cables test tested to BS 4066: Part 3:1994 was sub-contracted. The client resubmitted another sample of Black sheath cable, to retest water immersion test on Oversheath.

4) Results

The results of the tests carried out are detailed in the following report

5) Conclusion

The sample submitted complied with the requirements of the Specification. For the tests which were requested

TESTING OF CABLE MANUFACTURED TO BS 6724:1997 TABLE 10

4 core

Conductor size: 16 sq.mm

ASSESSMENT

Marking Elements a,b,c Embossed
ELECTRIC CABLE 600/1000V BS 6724 PASS

Marking on 2 line(s) Character size 4 mm. Repeat intervals (a,b,c):- 503 mm PASS

Marking Elements d,e
Identification of manufacturer and year Embossed
4x16 MM2 CU/XLPE/SWA/LSF NATIONAL CABLE INDUSTRY UAE 2006 PASS

Repeat interval:- 511 mm PASS

Construction

Sheath colour Black PASS
Filler Synthetic PASS
Extruded bedding PASS
Conductor:-Circular stranded plain annealed Cu Core lay up RH PASS
Armoured Galvanised steel wire LH Lay Size: 1.23 mm PASS

Voltage Tests:-

Complete Cable @ 3.5 kV PASS

Thickness of oversheath Mean N/A Minimum 1.74 mm PASS

Thickness of extruded bedding Minimum 0.85 mm PASS

Date samples received:- 22/05/06	Testing commenced:- 02/06/06	Tested by:- C.R.Mead
Date job raised:- 18/05/06	Testing completed:- 14/09/06	Checked by:- C.Yogarathnam

N/A = Not Applicable

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TESTING OF CABLE MANUFACTURED TO BS 6724:1997 TABLE 10**4 core****Conductor size: 16 sq.mm****ASSESSMENT****Tests on individual cores**

Core ID and sequence	Red	Yellow	Blue	Black	PASS
Indelibility	P	P	P	P	PASS
Class of conductor	2	2	2	2	PASS
No. of Wires	7	7	7	7	PASS
Conductor resistance @ 20° C (ohms/km)	1.13	1.14	1.14	1.13	PASS
Insulation Thickness					
Mean (mm)	0.84	0.86	0.82	0.86	PASS
Min (mm)	0.73	0.78	0.76	0.79	PASS

Overall assessment:- PASS

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TESTING OF CABLE MANUFACTURED TO BS 6724:1997 TABLE 10

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Conductor size: 16 sq.mm

ASSESSMENTFlame Test on complete cable PASS**Tensile tests on Sheath**

Compound	LTS1	
Tensile strength unaged (N/mm ²)	16.4	
Elongation at Break-unaged (%)	720	
Tensile strength aged 7 days Air @ 100° C	15.2	
% Var Tensile strength aged 7 days in air @ 100° C	-8	
Elongation @ break aged 7 days Air @ 100° C	698	
% Var.Elongation aged 7 days Air @ 100° C	-3	
Compatibility Tensile Strength after ageing	16.3	
Compatibility Elongation @ break after ageing	717	
Compatibility % Var Tensile Strength	-1	
Compatibility % Var Elongation at break	-1	
Abrasion test	P	
Assessment of tensile test on sheath		PASS

Tensile tests on Cores

Compound	GP8			
	Red	Yellow	Blue	Black
Tensile strength unaged (N/mm ²)	28.6	27.7	27.1	29.1
Elongation at Break-unaged (%)	632	614	652	647
% Var Tensile strength, aged 7 days @ 135° C air	-1	4	12	0
% Var.Elongation at break, aged 7 days @ 135° C air	-9	1	-4	-11
Compatibility Tensile Strength after ageing	24.5	28.3	29.2	29.1
Compatibility Elongation @ break after ageing	546	546	556	552
Compatibility % Var Tensile Strength	-14	2	8	0
Compatibility % Var Elongation at break	-14	-11	-15	-15

Assessment of tensile tests on cores PASS**Overall assessment:-PASS**

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4 core

Conductor size: 16 sq.mm

ASSESSMENT

Tests on Sheath or complete cable

Compound	LTS1	
Tear resistance (min value. N/mm)	6.8	PASS
Insulation resistance constant @ 20° C Mohms.km	1318	PASS
Cold elongation @ -15° C		PASS
Cold Impact @ -15° C		PASS
Hot pressure (%)	11	PASS
WATER IMMERSION % Var tensile strength	-5	PASS
WATER IMMERSION % Var elongation @ break	-14	PASS
% Shrinkage of sheath after test 4hr @ 80° C	1.0	PASS

Tests on Bedding

Compound	BED	
Tensile strength (N/mm ²)	13.3	PASS
Elongation at Break (%)	142	PASS

Tests on individual cores

Compound	GP8			
CORE COLOURS	Red	Yellow	Blue	Black
Hot set test Max Elongation %	50	50	55	53
Hot set test Permanent Elongation	5	5	5	5
Water absorption (Gravimetric) mg/cm ²	0.25	0.18	0.18	0.17
Insulation resistance constant @ 90° C Mohms.km	13812	18019	16350	15253
% Shrinkage of cores after test 1hr @ 130° C	2	1.5	3	1.5

Overall assessment:- PASS

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ASSESSMENT

Tests on armour:-

Armour resistance @ 20° C (ohms/km):	2.6	PASS
Armour wrapping test:		PASS
Mass of Zinc coating on Armour (g/m ²):	274	PASS
Tensile test (Aluminium Wire) (N/mm ²)		N/A

Overall assessment:- PASS

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ASSESSMENT

Corrosive and acid gas determination

					Result
	Sheath	Bedding			-
Colour	Black	Black	Tape	Filler	-
Specified maximum corrosive and acid gas (%)	0.5	0.5	0.5	0.5	-
Measured maximum corrosive and acid gas (%)	0	0	0	0.10	PASS

					Result
	Core				-
Colour	Red	Yellow	Blue	Black	-
Specified maximum corrosive and acid gas (%)	0.5	0.5	0.5	0.5	-
Measured maximum corrosive and acid gas (%)	0	0	0	0	PASS

Smoke Emission test

		Result
Specified minimum light transmittance (%)	70	-
Measured minimum light transmittance (%)	87	Pass

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TESTING OF CABLE MANUFACTURED TO BS 6724:1997 TABLE 10**4 core****Conductor size: 16 sq.mm****ASSESSMENT****Flame retardant test:-**

The test was conducted in accordance with the procedure specified in BS 4066: Part 3:1994

A summary of the initial test conditions is given in the table below.

The maximum extent of the charred portion measured on the test sample was 0.64 m above the bottom edge of the burner.

ASSESSMENT**PASS**

Test date	07 June 2006
Temperature of chamber before the test (°C)	24.7
Airflow into chamber (l/m)	4960
Ignition burner gas flow (l/m)	13.6
Ignition burner air flow (l/m)	78.0
Distance from front surface of cable to burner (mm)	75.0

The sample complied with the requirements of the standard

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