
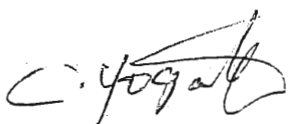


Test Report



Product Services

Report No	243/4351382	This Report consists of 12 pages
Client	National Cables Industry P.O.Box 27472 Sharjah U.A.E	
Authority & date	Clients order dated 14 November 2002	
Items tested	2 samples of Electric Cable	
Specification	BS 5467:1997 Excluding clauses 6.3 and 11.3 spark test	
Results	The samples submitted complied with the requirements of the Specification For the tests which were requested	
Prepared by	C R Mead 	Technician
Authorized by	C Yogaratnam 	Technical Engineer
Issue Date	31 March 2003	
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 General Manager, 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.	

1. Introduction

This Report relates to tests conducted on two samples of electric cable submitted by National Cables Industry, Sharjah, U.A.E.

This Report applies only to the particular samples 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 these or any related products.

2. Samples

The client submitted two samples of Electric Cable described as follows;

- 1) 2 samples of 4x300mm²
- 2) 4x150mm²

3. Testing

The samples submitted were subjected to the tests specified in BS 5467:1997 excluding Clauses 6.3 and 11.3 spark test, this test is in the final stage of manufacture.

An additional sample was submitted to check the repeat interval of marking.

4. Results

NOTE 1:- The potential variability in, both the items tested and the method of measurement used, means that for measurements close to a specified limit, the level of confidence in a compliance statement may or may not be reduced.

Further advice on the specific measurements in this report that may be affected can be obtained from the report authoriser shown on the front cover.

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

5. Conclusion

The samples submitted complied with the requirements of the Specification for the tests which were requested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 300 sq.mm

ASSESSMENT**Clause 12:- Marking**

Elements a,b,c Embossed
ELECTRIC CABLE 600/1000V BS 5467 PASS

Marking on 2 line(s) Character size 10 mm. Repeat intervals (a,b,c):-466 mm PASS

Elements d,e
Identification of manufacturer Embossed
4x300 MM2 CU/XLPE/SWA/PVC NATIONAL CABLES UAE 2003 PASS

Repeat interval:-448 mm PASS

Clauses 5, 8, 9, 10 and 11:- Construction

Sheath colour Black PASS

Filler Textile fibres PASS

Extruded bedding PASS

Conductor:-Shaped stranded plain annealed Cu Core lay up RH PASS

Armoured Galvanised steel wire LH Lay Size: 2.47 mm PASS

Clause 16.3:- Voltage Tests:-

Complete Cable @ 3.5 kV PASS

Clauses 9.2 and 11.2:- Bedding thickness and Oversheath thickness

Thickness of oversheath Mean N/A Minimum 2.57 mm PASS

Thickness of extruded bedding Minimum 1.36 mm PASS

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core **Conductor size: 300 sq.mm**

ASSESSMENT

Tests on individual cores

Clauses 5, 7 and 16.2

Core I.D and sequence	Red	Yellow	Blue	Black	PASS
Indelibility	P	P	P	P	PASS
Class of conductor	2	2	2	2	PASS
No. of Wires	61	61	61	61	PASS
Conductor resistance @ 20°C (ohms/km)	0.0593	0.0594	0.0592	0.0592	PASS

Clauses 6.2:- Insulation Thickness

Mean (mm)	2.10	2.71	2.67	2.05	PASS
Min (mm)	1.66	2.46	2.47	1.81	PASS

Overall assessment:- PASS

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 300 sq.mm

ASSESSMENT**Clause 17.2:-**Flame Test on complete cable PASS**Clauses 6.1, 11.1 and 18.2 :-****Tensile tests on Sheath**

Compound	9	
Tensile strength unaged (N/mm ²)	19.3	
Elongation at Break-unaged (%)	302	
Tensile strength aged 7 days Air @ 100° C	18.9	
% Var Tensile strength aged 7 days in air @ 100° C	-2	
Elongation @ break aged 7 days Air @ 100° C	314	
% Var.Elongation aged 7 days Air @ 100° C	4	
Compatibility Tensile Strength after ageing	19.9	
Compatibility Elongation @ break after ageing	325	
Compatibility % Var Tensile Strength	3	
Compatibility % Var Elongation at break	8	
Assessment of tensile tests on sheath		PASS

Tensile tests on Cores

Compound	GP8			
	Red	Yellow	Blue	Black
Tensile strength unaged (N/mm ²)	26.3	27.1	28.0	29.6
Elongation at Break-unaged (%)	636	632	645	649
% Var Tensile strength, aged 7 days @ 135° C air	11	7	4	-7
% Var.Elongation at break, aged 7 days @ 135° C air	-2	-3	-6	-10
Compatibility Tensile Strength after ageing	26.5	28.6	26.2	27.3
Compatibility Elongation @ break after ageing	614	613	585	595
Compatibility % Var Tensile Strength	1	5	-7	-8
Compatibility % Var Elongation at break	-3	-3	-9	-8

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

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 300 sq.mm

ASSESSMENT**Tests on Sheath or complete cable****Clauses 11.1:-**

Compound	9	
Insulation resistance constant @ 20° C Mohms.km	119.7	PASS
Cold elongation @ -15° C		PASS
Cold Impact @ -15° C		PASS
Loss of mass mg/cm ²	0.7	PASS
Hot pressure (%)	28	PASS
Heat shock test	PASS	PASS

Clause 9.1:- Tests on Bedding

Compound	BED	
Tensile strength (N/mm ²)	21.3	PASS
Elongation at Break (%)	253	PASS

Tests on individual cores**Clauses 6.1 and 18.3:-**

Compound	GP8				
ORE COLOURS	Red	Yellow	Blue	Black	
Hot set test Max Elongation %	78	68	63	70	PASS
Hot set test Permanent Elongation	5	5	5	5	PASS
Water absorption (Gravimetric) mg/cm ²	0.03	0.02	0.05	0.04	PASS
Insulation resistance constant @ 90° C Mohms.km	160624	68244	100669	2970000	PASS
% Shrinkage of cores after test 1hr @ 130° C	2.5	2.5	2.5	2.5	PASS

Overall assessment:- PASS

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 300 sq.mm

ASSESSMENT

Clause 10.3 and 10.5:- Tests on armour

Armour resistance @ 20°C (ohms/km):	0.40	PASS
Armour wrapping test:		PASS
Mass of Zinc coating on Armour (g/m ²):	289	PASS
Tensile test (Aluminium Wire) (N/mm ²)		N/A

Overall assessment:- PASS

The sample complied with the requirements of the standard

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 150 sq.mm

ASSESSMENT**Clause 12:- Marking**

Elements a,b,c Embossed
ELECTRIC CABLE 600/1000V BS 5467 PASS

Marking on 2 line(s) Character size 6 mm. Repeat intervals (a,b,c):-495 mm PASS

Elements d,e
Identification of manufacturer Embossed
4x150 MM2 CU/XLPE/SWA/PVC NATIONAL CABLES UAE 2002 PASS

Repeat interval:-490 mm PASS PASS

Clauses 5, 8, 9, 10 and 11:- Construction

Sheath colour Black PASS

Filler Textile fibres PASS

Extruded bedding PASS

Conductor:-Shaped stranded plain annealed Cu Core lay up RH PASS

Armoured Galvanised steel wire LH Lay Size: 2.47 mm PASS

Clause 16.3:- Voltage Tests:-

Complete Cable @ 3.5 kV PASS

Clauses 9.2 and 11.2:- Bedding thickness and Oversheath thickness

Thickness of oversheath Mean N/A Minimum 2.47 mm PASS

Thickness of extruded bedding Minimum 1.38 mm PASS

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 150 sq.mm

ASSESSMENT**Tests on individual cores****Clauses 5, 7 and 16.2**

	Red	Yellow	Blue	Black	
Core I.D and sequence	Red	Yellow	Blue	Black	PASS
Indelibility	P	P	P	P	PASS
Class of conductor	2	2	2	2	PASS
lo. of Wires	37	37	37	37	PASS
Conductor resistance @ 20°C (ohms/km)	0.122	0.124*	0.121	0.123	PASS*

Clauses 6.2:- Insulation Thickness

	Red	Yellow	Blue	Black	
Mean (mm)	1.50	1.64	1.55	1.69	PASS
Min (mm)	1.29	1.45	1.39	1.39	PASS

Overall assessment:- PASS

**Note:- The resistance value of the Yellow core falls within the range of
Uncertainty of measurement. Uncertainty of the measurement is $\pm 0.32\%$
Of the measured value**

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 150 sq.mm

ASSESSMENT**Clause 17.2:-**

Flame Test on complete cable

PASS

Clauses 6.1, 11.1 and 18.2 :-**Tensile tests on Sheath**

Compound	9
Tensile strength unaged (N/mm ²)	19.5
Elongation at Break-unaged (%)	300
Tensile strength aged 7 days Air @ 100° C	19.2
% Var Tensile strength aged 7 days in air @ 100° C	-1
Elongation @ break aged 7 days Air @ 100° C	339
% Var.Elongation aged 7 days Air @ 100° C	13
Compatibility Tensile Strength after ageing	19.8
Compatibility Elongation @ break after ageing	287
Compatibility % Var Tensile Strength	2
Compatibility % Var Elongation at break	-5
Assessment of tensile tests on sheath	PASS

Tensile tests on Cores

Compound	GP8			
	Red	Yellow	Blue	Black
Tensile strength unaged (N/mm ²)	26.7	29.2	28.8	26.9
Elongation at Break-unaged (%)	621	655	671	627
% Var Tensile strength, aged 7 days @ 135° C air	1	1	1	6
% Var.Elongation at break, aged 7 days @ 135° C air	-6	-7	-4	-4
Compatibility Tensile Strength after ageing	27.0	27.4	25.5	28.2
Compatibility Elongation @ break after ageing	583	593	628	622
Compatibility % Var Tensile Strength	1	-6	-11	5
Compatibility % Var Elongation at break	-6	-9	-6	-1

Assessment of tensile tests on cores

PASS

Overall assessment :- PASS

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 150sq.mm

ASSESSMENT**Tests on Sheath or complete cable****Clauses 11.1:-**

Compound	9	
Insulation resistance constant @ 20° C Mohms.km	0.1364	PASS
Cold elongation @ -15° C		PASS
Cold Impact @ -15° C		PASS
Loss of mass mg/cm ²	0.61	PASS
Hot pressure (%)	30	PASS
Heat shock test	PASS	PASS

Clause 9.1:- Tests on Bedding

Compound	BED	
Tensile strength (N/mm ²)	19.8	PASS
Elongation at Break (%)	294	PASS

Tests on individual cores**Clauses 6.1 and 18.3:-**

Compound	GP8				
CORE COLOURS	Red	Yellow	Blue	Black	
Hot set test Max Elongation %	63	60	65	70	PASS
Hot set test Permanent Elongation	5	0	3	5	PASS
Water absorption (Gravimetric) mg/cm ²	0.01	0.06	0.03	0.05	PASS
Insulation resistance constant @ 90° C Mohms.km	98588	69089	61786	99518	PASS
% Shrinkage of cores after test 1hr @ 130° C	2.5	1.5	2.0	2.0	PASS

Overall assessment:- PASS

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TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10**4 core****Conductor size: 150 sq.mm****ASSESSMENT****Clause 10.3 and 10.5:- Tests on armour**

Armour resistance @ 20°C (ohms/km):	0.54	PASS
Armour wrapping test:		PASS
Mass of Zinc coating on Armour (g/m ²):	349	PASS
Tensile test (Aluminium Wire) (N/mm ²)		N/A

Overall assessment:- PASS**The sample complied with the requirements of the standard**

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