

Declaration of Test Results

BSI Product Services hereby declares that the item described below has been tested by BSI and complies with the requirements of BS 5467:1997 Excluding clauses 6.3 and 11.3 spark test

The complete detail of the tests performed and the results are recorded in BSI Test Report No: 243/4351381 Dated: 18 March 2003

Description of item tested: Two samples Electric cable as follows;
1) 4 x 10 mm²
2) 4 x 35 mm²

Submitted by: National Cables Industry
P.O.Box 27472
Sharjah
U.A.E

Declaration authorised by:


Mr. Mick Gower

Title Business Sector Manager Testing

Date 18 March 2003

Attention is drawn to the conditions upon which this declaration is issued, namely:

1. This declaration does not indicate provide or imply any measure of Approval, Certification, Supervision, Control or Surveillance by BSI to this or any related product.


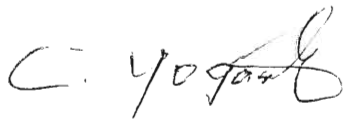
2. This Declaration applied only to the particular sample tested and to the specific tests carried out as detailed in the Report referred to above.

3. The general and specific conditions of the BSI Product Services, PS082 apply in all respects. Copies of this leaflet are available on request.

Test Report



Product Services

Report No	243/4351381	This Report consists of 12 pages
Client	National Cables Industry P.O.Box 27472 Sharjah U.A.E	
Authority & date	Clients order dated 19 July 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	G Kelly 	Technician
Authorized by	C Yogaratnam 	Technical Engineer
Issue Date	18 March 2003	
Conditions of issue	This Test Report is issued subject to the conditions stated in current issue of <i>PS082</i> '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) 4x10mm²
- 2) 4x35mm²

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.

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: 10 sq.mm**

ASSESSMENT

Clause 12:- Marking

Elements a,b,c ELECTRIC CABLE 600/1000V BS 5467	Embossed	PASS
Marking on 2 line(s) Character size 4 mm. Repeat intervals (a,b,c):-476 mm		PASS
Elements d,e Identification of manufacturer 4x10 MM2 CU/XLPE/SWA/PVC NATIONAL CABLES UAE 2002	Embossed	PASS
Repeat interval:-480 mm		PASS

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

Sheath colour Black		PASS
Filler Textile fibres		PASS
Extruded bedding		PASS
Conductor:-Circular stranded plain annealed Cu	Core lay up RH	PASS
Armoured Galvanised steel wire	LH Lay Size: 1.24 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 1.56 mm	PASS
Thickness of extruded bedding	Minimum 0.94 mm		PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogaratnam
N/A = Not Applicable	N/R = Not Requested	N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10**4 core****Conductor size: 10 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	7	7	7	7	PASS
Conductor resistance @ 20°C (ohms/km)	1.06	1.40	1.45	1.49	PASS

Clauses 6.2:- Insulation Thickness

Mean (mm)	0.80	0.89	0.82	0.76	PASS
Min (mm)	0.72	0.83	0.75	0.71	PASS

Overall assessment:- PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogaratnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10**4 core****Conductor size: 10 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)	20.1			
Elongation at Break-unaged (%)	267			
Tensile strength aged 7 days Air @ 100° C	19.8			
% Var Tensile strength aged 7 days in air @ 100° C	-2			
Elongation @ break aged 7 days Air @ 100° C	270			
% Var.Elongation aged 7 days Air @ 100° C	1			
Compatibility Tensile Strength after ageing	20.9			
Compatibility Elongation @ break after ageing	289			
Compatibility % Var Tensile Strength	4			
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)	22.2	20.4	21.8	18.9
Elongation at Break-unaged (%)	571	538	560	509
% Var Tensile strength, aged 7 days @ 135° C air	-6	5	-1	9
% Var.Elongation at break, aged 7 days @ 135° C air	-6	-3	-8	-3
Compatibility Tensile Strength after ageing	22.6	18.6	18.8	15.9
Compatibility Elongation @ break after ageing	545	473	498	442
Compatibility % Var Tensile Strength	2	-9	-14	-16
Compatibility % Var Elongation at break	-4	-12	-11	-13

Assessment of tensile tests on cores

PASS

Overall assessment :- PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10**4 core****Conductor size: 10 sq.mm****ASSESSMENT****Tests on Sheath or complete cable****Clauses 11.1:-**

Compound	9	
Insulation resistance constant @ 20° C Mohms.km	347.4	PASS
Cold elongation @ -15° C		PASS
Cold Impact @ -15° C		PASS
Loss of mass mg/cm ²	0.48	PASS
Hot pressure (%)	22	PASS
Heat shock test	PASS	PASS

Clause 9.1:- Tests on Bedding

Compound	BED	
Tensile strength (N/mm ²)	19.6	PASS
Elongation at Break (%)	284	PASS

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

Compound	GP8				
CORE COLOURS	Red	Yellow	Blue	Black	
Hot set test Max Elongation %	58	55	58	55	PASS
Hot set test Permanent Elongation	5	3	5	3	PASS
Water absorption (Gravimetric) mg/cm ²	0	0	0	0	PASS
Insulation resistance constant @ 90° C Mohms.km	169834	99950	93703	126697	PASS
% Shrinkage of cores after test 1hr @ 130° C	1.5	1.5	1.5	1.5	PASS

Overall assessment:- PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 10 sq.mm

ASSESSMENT

Clause 10.3 and 10.5:- Tests on armour

Armour resistance @ 20°C (ohms/km):	2.96	PASS
Armour wrapping test:		PASS
Mass of Zinc coating on Armour (g/m ²):	233	PASS
Tensile test (Aluminium Wire) (N/mm ²)		N/A

Overall assessment:- PASS

The sample complied with the requirements of the standard

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogaratnam

N/A = Not Applicable N/R = Not Requested N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 35 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 4 mm. Repeat intervals (a,b,c):-471 mm	PASS
Elements d,e		
Identification of manufacturer	Embossed	
4x35 MM2 CU/XLPE/SWA/PVC NATIONAL CABLES UAE 2002		PASS
Repeat interval:-475 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: 1.61 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 1.82 mm	PASS
Thickness of extruded bedding	Minimum 1.08 mm		PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10**4 core****Conductor size: 35 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	7	7	7	7	PASS
Conductor resistance @ 20°C (ohms/km)	0.520	0.514	0.516	0.522	PASS

Clauses 6.2:- Insulation Thickness

Mean (mm)	1.01	1.06	1.14	1.15	PASS
Min (mm)	0.91	0.85	1.03	1.05	PASS

Overall assessment:- PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 35 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)	20.5	
Elongation at Break-unaged (%)	245	
Tensile strength aged 7 days Air @ 100° C	20.9	
% Var Tensile strength aged 7 days in air @ 100° C	-2	
Elongation @ break aged 7 days Air @ 100° C	260	
% Var.Elongation aged 7 days Air @ 100° C	6	
Compatibility Tensile Strength after ageing	19.6	
Compatibility Elongation @ break after ageing	190	
Compatibility % Var Tensile Strength	-4	
Compatibility % Var Elongation at break	-22	
Assessment of tensile tests on sheath		PASS

Tensile tests on Cores

Compound	GP8			
	Red	Yellow	Blue	Black
Tensile strength unaged (N/mm ²)	18.1	18.2	23.3	22.0
Elongation at Break-unaged (%)	531	530	589	599
% Var Tensile strength, aged 7 days @ 135° C air	21	3	-13	3
% Var.Elongation at break, aged 7 days @ 135° C air	9	4	-8	-5
Compatibility Tensile Strength after ageing	15.4	14.7	17.9	17.5
Compatibility Elongation @ break after ageing	501	438	566	517
Compatibility % Var Tensile Strength	-15	-20	-23	-20
Compatibility % Var Elongation at break	-6	-17	-9	-14

Assessment of tensile tests on cores PASS

Overall assessment :- PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 35 sq.mm

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

Compound	9	
Insulation resistance constant @ 20° C Mohms.km	415.9	PASS
Cold elongation @ -15° C		PASS
Cold Impact @ -15° C		PASS
Loss of mass mg/cm ²	0.60	PASS
Hot pressure (%)	16	PASS
Heat shock test	PASS	PASS

Clause 9.1:- Tests on Bedding

Compound	BED	
Tensile strength (N/mm ²)	20.6	PASS
Elongation at Break (%)	286	PASS

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

Compound	GP8				
CORE COLOURS	Red	Yellow	Blue	Black	
Hot set test Max Elongation %	60	58	58	55	PASS
Hot set test Permanent Elongation	3	0	5	0	PASS
Water absorption (Gravimetric) mg/cm ²	0	0	0	0	PASS
Insulation resistance constant @ 90° C Mohms.km	38220	40463	91801	52898	PASS
% Shrinkage of cores after test 1hr @ 130° C	1.5	1.5	1.5	1.5	PASS

Overall assessment:- PASS

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 5467:1997 TABLE 10

4 core

Conductor size: 35 sq.mm

ASSESSMENT

Clause 10.3 and 10.5:- Tests on armour

Armour resistance @ 20°C (ohms/km):	1.67	PASS
Armour wrapping test:		PASS
Mass of Zinc coating on Armour (g/m ²):	256	PASS
Tensile test (Aluminium Wire) (N/mm ²)		N/A

Overall assessment:- PASS

The sample complied with the requirements of the standard

Date samples received:- 24/01/03	Testing commenced:- 06/02/03	Tested by:- G.Kelly
Date job raised:- 17/07/02	Testing completed:- 18/03/03	Checked by:- C.Yogarathnam

N/A = Not Applicable N/R = Not Requested N/T = Not Tested