

## 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 6004:2000 Excluding clause 7.5 Absence of faults in the insulation*

*The complete detail of the tests performed and the results are recorded in BSI Test Report No: 243/4351380 Dated: 04 November 2002*

*Description of item tested:* Four samples of Electric Cable as follows;  
1) 1x1.5 mm<sup>2</sup> Green/Yellow cable  
2) 1x2.5 mm<sup>2</sup> Green/Yellow cable  
3) 1x4.0 mm<sup>2</sup> Green/Yellow cable  
4) 1x6.0 mm<sup>2</sup> Green/Yellow cable

*Submitted by:* National Cables Industry  
PO Box 27472  
Sharjah  
United Arab Emirates

*Declaration authorised by:*

  
\_\_\_\_\_  
Mr. Mick Gower  
Title Laboratory Manager  
Date 04 November 2002


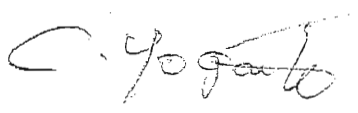
Attention is drawn to the conditions upon which this declaration is issued, namely:

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	243/4351380	This Report consists of 18 pages
Client	National Cables Industry PO Box 27472 Sharjah United Arab Emirates	
Authority & date	Clients Order dated 18 July 2002	
Items tested	4 samples of Electric Cable	
Specification	BS 6004:2000 Excluding clause 7.5 Absence of faults in the insulation	
Results	The samples submitted complied with the requirements of the Specification For the tests which were requested	
Prepared by	M A Bonnar 	Technician
Authorized by	C Yogaratnam 	Technical Engineer
Issue Date	04 November 2002	
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.	



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## 1) Introduction

This report relates to tests conducted on four samples of electric cable submitted by National Cables Industry, Sharjah, United Arab Emirates.

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 as detailed below;

- 1) 1 x 1.5 mm<sup>2</sup> Green / Yellow cable.
- 2) 1 x 2.5 mm<sup>2</sup> Green / Yellow cable
- 3) 1 x 4.0 mm<sup>2</sup> Green / Yellow cable
- 4) 1 x 6.0 mm<sup>2</sup> Green / Yellow cable

## 3) Testing

The samples submitted were subjected to the tests specified in Table 4a of BS 6004:2000. Excluding clause 7.5 Absence of faults in the insulation, this test is in the final stage of manufacture.

Further samples were submitted following the failure of Overall diameter on sample 1 and Conductor resistance on sample 2. Also further samples of each cable size were submitted to assess the modified cable marking.

## 4) Results

The results of the tests carried out are detailed on the following pages of this Report.

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.

## 5) Conclusion

The sample submitted complied with the requirements of the Specification for those tests, which were requested.

TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a

Circular Cable      1 core      Conductor size: 1.5 sq.mm

ASSESSMENT

Indication of origin

Marking printed on insulation:-  
NATIONAL CABLE U.A.E. HO7V R 450/750 VOLTS 1.5MM<sup>2</sup> AS PER BS 6004      PASS

Legible:- PASS      Durable:- PASS      Repeat interval:- 247 mm      PASS      PASS

Construction

Outer Covering:      G/Y INSULATION  
Type of conductor:      PLAIN ANNEALED Cu  
Filler:      NONE  
Circuit Protective Conductor: N/A

Overall assessment of construction      PASS

Voltage test on non sheathed cable @ 2500 V      PASS

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

N/A = Not Applicable

N/R = Not Requested

N/T = Not Tested

**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

Circular Cable 1 core

Conductor size: 1.5 sq.mm

**ASSESSMENT****Tests on individual cores**

Core I.D. and sequence	G/Y	PASS
Green/Yellow Proportion	38/62	PASS
Core colour indelibility	P	PASS
<b>Conductors</b>		
Wire Number of wire	7	PASS
Mass of conductor	2	PASS
Resistance (ohms/km)	11.1	PASS
<b>Insulation Thickness</b>		
Mean (mm)	0.98	PASS
Min (mm)	0.85	PASS

Overall assessment:- **PASS****Heat shock test**Cores **PASS** **PASS**Overall assessment:- **PASS**

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a****Circular Cable** 1 core**Conductor size:** 1.5 sq.mm**ASSESSMENT****Tests on complete cable**

Mean Overall Diameter Circular Cable:- (mm) 2.9 PASS  
 Fire performance test PASS

**Tensile tests on Cores**

Compound	TI1
Core I.D. and sequence	G/Y
Tensile strength unaged (N/mm <sup>2</sup> )	15.8
Elongation at Break-unaged (%)	186
Tensile strength, aged 80 C (N/mm <sup>2</sup> )	13.7
% Var Tensile strength, aged 80 C	-13
Elongation @ break after ageing 80 C (%)	205
% Var.Elongation @ break after ageing 80 C	10

Assessment of tensile tests on cores PASS

**Overall assessment:- PASS**

Date samples received:- 19/07/02

Testing commenced:- 19/07/02

Tested by:- M.A.Bonnar

Date job raised:- 19/09/02

Testing completed:- 04/11/02

Checked by:- C.Yogarathnam

N/A = Not Applicable

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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

Circular Cable 1 core

Conductor size: 1.5 sq.mm

**ASSESSMENT****Tests on individual cores**

Compound	TI1	
Core I.D. and sequence	G/Y	
Insulation resistance constant @ 70 C Mohms.km	12.48	PASS
Cold Bend @ -15 C	P	PASS
Cold Impact @ -15 C	P	PASS
Loss of mass mg/cm <sup>2</sup>	0.07	PASS
Hot pressure	36	PASS
Insulation resistance @ 70 C (Mohms.km)	3.925	PASS
Resistance of insulation to D.C	P	PASS

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

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam
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TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a

Circular Cable 1 core

Conductor size: 2.5 sq.mm

ASSESSMENT

Indication of origin

Marking printed on insulation:-

NATIONAL CABLE U.A.E. HO7VR 450/750 VOLTS 2.5MM<sup>2</sup> AS PER BS 6004 PASS

Legible:- PASS Durable:- PASS Repeat interval:- 236 mm PASS PASS

Construction

Outer Covering: G/Y INSULATION  
Type of conductor: PLAIN ANNEALED Cu  
Filler: NONE  
Circuit Protective Conductor: N/A

Overall assessment of construction PASS

Voltage test on non sheathed cable @ 2500 V PASS

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a****Circular Cable** 1 core**Conductor size:** 2.5 sq.mm**ASSESSMENT****Tests on individual cores**

Core I.D. and sequence	G/Y	PASS
Green/Yellow Proportion	36/64	PASS
Core colour indelibility	P	PASS
<b>Conductors</b>		
Wire Number of wire	7	PASS
Mass of conductor	2	PASS
Resistance (ohms/km)	7.20	PASS
<b>Insulation Thickness</b>		
Mean (mm)	0.85	PASS
Min (mm)	0.75	PASS

**Overall assessment:- PASS****Heat shock test**

Cores PASS PASS

**Overall assessment :- PASS**

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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

Circular Cable 1 core

Conductor size: 2.5 sq.mm

**ASSESSMENT****Tests on complete cable**

Mean Overall Diameter Circular Cable:- (mm) 3.6 PASS

Fire performance test PASS

**Tensile tests on Cores**

Compound	T11
Core I.D. and sequence	G/Y
Tensile strength unaged (N/mm <sup>2</sup> )	20.0
Elongation at Break-unaged (%)	291
Tensile strength, aged 80 C (N/mm <sup>2</sup> )	19.7
% Var Tensile strength, aged 80 C	-2
Elongation @ break after ageing 80 C (%)	285
% Var.Elongation @ break after ageing 80 C	-2

Assessment of tensile tests on cores PASS

**Overall assessment:- PASS**

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

**Circular Cable**      1 core

**Conductor size:** 2.5 sq.mm

**ASSESSMENT**

**Tests on individual cores**

Compound	TI1	
Core I.D. and sequence	G/Y	
Insulation resistance constant @ 70 C Mohms.km	14.275	PASS
Cold Bend @ -15 C	P	PASS
Cold Impact @ -15 C	P	PASS
Loss of mass mg/cm <sup>2</sup>	0.01	PASS
Hot pressure	32	PASS
Insulation resistance @ 70 C (Mohms.km)	3.385	PASS
Resistance of insulation to D.C	P	PASS

**Overall assessment:-      PASS**

**The sample complied with the requirements of the standard**

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Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a

Circular Cable 1 core

Conductor size: 4.0 sq.mm

ASSESSMENT

Indication of origin

Marking printed on insulation:-

NATIONAL CABLE U.A.E. HO7VR 450/750 VOLTS 4.0MM<sup>2</sup> AS PER BS 6004 PASS

Legible:- PASS Durable:- PASS Repeat interval:- 237 mm PASS PASS

Construction

Outer Covering: G/Y INSULATION  
Type of conductor: PLAIN ANNEALED Cu  
Filler: NONE  
Circuit Protective Conductor: N/A

Overall assessment of construction PASS

Voltage test on non sheathed cable @ 2500 V PASS

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

**Circular Cable**      1 core      **Conductor size:** 4.0 sq.mm

**ASSESSMENT**

**Tests on individual cores**

Core I.D. and sequence	G/Y	PASS
Green/Yellow Proportion	42/58	PASS
Core colour indelibility	P	PASS
<b>Conductors</b>		
Wire Number of wire	7	PASS
Class of conductor	2	PASS
Resistance (ohms/km)	4.39	PASS
<b>Insulation Thickness</b>		
Mean (mm)	0.79	PASS
Min (mm)	0.74	PASS

**Overall assessment:- PASS**

**Heat shock test**

**Cores**      **PASS**      **PASS**

**Overall assessment:- PASS**

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Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarajnam

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TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a

Circular Cable 1 core

Conductor size: 4.0 sq.mm

ASSESSMENT

Tests on complete cable

Mean Overall Diameter Circular Cable:- (mm) 4.1 PASS

Fire performance test PASS

Tensile tests on Cores

Compound	TI1
Core I.D. and sequence	G/Y
Tensile strength unaged (N/mm <sup>2</sup> )	17.8
Elongation at Break-unaged (%)	243
Tensile strength, aged 80 C (N/mm <sup>2</sup> )	17.4
% Var Tensile strength, aged 80 C	-2
Elongation @ break after ageing 80 C (%)	251
% Var.Elongation @ break after ageing 80 C	3

Assessment of tensile tests on cores PASS

Overall assessment:- PASS

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

**Circular Cable**      1 core

**Conductor size:** 4.0 sq.mm

**ASSESSMENT**

**Tests on individual cores**

Compound	TI1	
Core I.D. and sequence	G/Y	
Insulation resistance constant @ 70 C Mohms.km	10.12	PASS
old Bend @ -15 C	P	PASS
Cold Impact @ -15 C	P	PASS
Loss of mass mg/cm <sup>2</sup>	0.08	PASS
Hot pressure	23	PASS
Insulation resistance @ 70 C (Mohms.km)	1.875	PASS
Resistance of insulation to D.C	P	PASS

**Overall assessment:- PASS**

**The sample complied with the requirements of the standard**

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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N/T = Not Tested

TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a

Circular Cable 1 core

Conductor size: 6.0 sq.mm

ASSESSMENT

Indication of origin

Marking printed on insulation:-

NATIONAL CABLE U.A.E. HO7VR 450/750 VOLTS 6.0MM<sup>2</sup> AS PER BS 6004 PASS

Legible:- PASS Durable:- PASS Repeat interval:- 225 mm PASS PASS

Construction

Outer Covering: G/Y INSULATION  
Type of conductor: PLAIN ANNEALED Cu  
Filler: NONE  
Circuit Protective Conductor: N/A

Overall assessment of construction PASS

Voltage test on non sheathed cable @ 2500 V PASS

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a**

**Circular Cable**      1 core      **Conductor size:** 6.0 sq.mm

**ASSESSMENT**

**Tests on individual cores**

Core I.D. and sequence	G/Y	PASS
Green/Yellow Proportion	37/63	PASS
Core colour indelibility	P	PASS
<b>Conductors</b>		
Wire Number of wire	7	PASS
Class of conductor	2	PASS
Resistance (ohms/km)	2.84	PASS
<b>Insulation Thickness</b>		
Mean (mm)	0.80	PASS
Min (mm)	0.74	PASS

**Overall assessment:- PASS**

**Heat shock test**

Cores	PASS	PASS
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**Overall assessment:- PASS**

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
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**TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a****Circular Cable** 1 core**Conductor size:** 6.0 sq.mm**ASSESSMENT****Tests on complete cable**Mean Overall Diameter Circular Cable:- (mm) 4.7 **PASS**Fire performance test **PASS****Tensile tests on Cores**

Compound	TI1
Core I.D. and sequence	G/Y
Tensile strength unaged (N/mm <sup>2</sup> )	18.3
Elongation at Break-unaged (%)	254
Tensile strength, aged 80 C (N/mm <sup>2</sup> )	17.7
% Var Tensile strength, aged 80 C	-3
Elongation @ break after ageing 80 C (%)	255
% Var.Elongation @ break after ageing 80 C	1

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

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
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TESTING OF CABLE MANUFACTURED TO BS 6004:2000 TABLE 4a

Circular Cable      1 core      Conductor size: 6.0 sq.mm

ASSESSMENT

Tests on individual cores

Compound	TI1	
Core I.D. and sequence	G/Y	
Insulation resistance constant @ 70 C Mohms.km	12.32	PASS
Cold Bend @ -15 C	P	PASS
Cold Impact @ -15 C	P	PASS
Loss of mass mg/cm <sup>2</sup>	0.02	PASS
Hot pressure	28	PASS
Insulation resistance @ 70 C (Mohms.km)	2.17	PASS
Resistance of insulation to D.C	P	PASS

Overall assessment:- PASS

The sample complied with the requirements of the standard

Date samples received:- 19/07/02	Testing commenced:- 19/07/02	Tested by:- M.A.Bonnar
Date job raised:- 19/09/02	Testing completed:- 04/11/02	Checked by:- C.Yogarathnam

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