CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT

Test Report Number : DCCD- 12647 **Dated** : 07.06.2012

Name & Address of the Customer : M/s.National Cables Industry .,
P.O. Box, 27472, Al Sajja industrial Area,
Al Dhaid Road, Sharjah, UAE.

Name & Address of the Manufacturer : M/s.National Cables Industry .,
P.O. Box, 27472, Al Sajja industrial Area,
Al Dhaid Road, Sharjah, UAE.

Particulars of sample tested : 3X 300sq.mm, AL/XLPE/SWA/PVC 6.35/11(12) kV Cable

Condition of the sample on receipt : New.Sample sealed at both ends with the signature of Mansoore Dated 10.04.2012

Type : XLPE cable

Designation :Conductor Material : Aluminum
Size : 300 mm^2
Number of cores : Three
Insulation : XLPE
Bedding : PVC
Armour : Galvanised Steel Round Wire
Outer sheath: PVC
Voltage Rating : 6.35/11(12) kV
Embossing : ELECTRIC CABLE 6.35/11 KV,3X300 SQ.MM AL/XLPE/SWA/PVC NATIONAL CABLES INDUSTRY UAE 2012 PO. NO.45000060994

Serial Number : DRUM # 50809818
Number of Samples tested : One
Date(s) of Test(s) : 01.05.2012 to 07.06.2012
CPRI Sample Code no(s) : DCCDCAB12S0069
Particulars of test conducted : Type Test
Test in accordance with
Standard /Specification : As per IEC 60502-2 -2005 and EDD 7: 2004
Sampling plan : Not Applicable
Customer's requirement : As per IEC 60502-2 -2005 and EDD 7: 2004
Deviation if any : Nil
Name of the witnessing persons
Customer's representatives :None.
Other than customer's representatives : None.
Test subcontracted with address
of the laboratory : Nil
Documents constituting this report (in words)
Number of sheets : Fourteen
Number of oscillogram/s : Twelve (Three Pages)
Number of graphs : Nil
Number of photos : Nil
Number of test circuit diagrams : Nil
Number of drawings : One.

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(K.Mallikarjunappa)
Joint Director

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I. TESTS ON CONDUCTOR

1. Conductor Resistance Test:

Sl.No	Core Identification	Resistance in Ω/Km at 20° C	
		Observed values	Specified value(Max)
1.	Red	0.09472	0.1
2.	Yellow	0.09485	
3.	Blue	0.09490	

2. Conductor Examination:

Sl.No	Core Identification	Number of Strands in Conductor	
		Observed values	Specified value(Min)
1.	Red	61	30
2.	Yellow	61	
3.	Blue	61	

II. TEST ON ARMOUR

1. Test for dimensions:

a) Type: Galvanised steel round wire
b) Specified Nominal Diameter : 3.15 mm
c) Observed Nominal diameter : 3.15 mm

2. Mass of Zinc coating:

a) Specified value (min): 255.0 g/m^2
b) Observed value :293.19 g/m^2

3. D.C Resistance of Armour Wire:

a) Specified Resistance in Ω/Km at 20° C : 17.71 Ω/Km at 20° C (Max)
b) Observed Resistance in Ω/Km at 20° C : 17.09 Ω/Km at 20° C

4. D.C Resistance of Cable Armour :

a) Specified Resistance in Ω/Km at 20° C : 0.295 Ω/Km at 20° C (Max)
b) Observed Resistance in Ω/Km at 20° C : 0.2644 Ω/Km at 20° C

III. TESTS ON INSULATION:

1(a). Test for Thickness of insulation

Sl. No	Core Identification	Observed Values(mm)		Specified Values(mm)	
		Minimum	Nominal	Minimum	Nominal
1.	Red	3.399	3.454	2.96	3.4
2.	Yellow	3.459	3.507		
3.	Blue	3.462	3.518		

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1(b). Eccentricity of Insulation:

Sl.No.	Core Identification	Eccentricity	
		Observed values	Specified value(Max)
1	Red	0.036	0.15
2	Yellow	0.032	
3	Blue	0.025	

2. Tensile Strength and Elongation at Break

A. Before Ageing:

Sl.No	Core Identification	Observed Values		Specified Values(Min)	
		Tensile Strength N/mm^2	Elongation at Break (%)	Tensile Strength N/mm^2	Elongation at Break (%)
1.	Red	18.48	552.7	12.5	200
2.	Yellow	21.12	557.1		
3.	Blue	18.32	552.8		

B. Ageing :

Sample	Temperature	Duration
Dumb- bell Specimens	135 ± 3^0 C	168 Hours

C. After Ageing:

Sl.No	Core Identification	Observed Values	
		Tensile Strength N/mm^2	Elongation at Break (%)
1.	Red	19.33	593.3
2.	Yellow	20.05	573.5
3.	Blue	18.59	534.0

D. Variations Observed From Before Ageing Samples:

Sl.No	Core Identification	Observed % Variations		Specified % Variations (Max)	
		Tensile Strength (%)	Elongation at Break (%)	Tensile Strength (%)	Elongation at Break (%)
1.	Red	4.58	4.81	± 25	± 25
2.	Yellow	-5.07	2.94		
3.	Blue	1.49	-3.40		

E. After Completed Cable Ageing:

(i) Ageing :

Sample	Temperature	Duration
200 mm of completed Cable	100 ± 2^0 C	168 Hours

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(ii) Tensile Strength & Elongation at Break after completed cable ageing:

Sl.No	Core Identification	Observed Values	
		Tensile Strength N/mm^2	Elongation at Break (%)
1.	Red	19.90	582.75
2.	Yellow	20.07	565.45
3.	Blue	20.06	580.80

(iii) Variations Observed from Before Ageing Samples

Sl.No	Core Identification	Observed % Variations		Specified % Variations (Max)	
		Tensile Strength (%)	Elongation At Break (%)	Tensile Strength (%)	Elongation at Break (%)
1.	Red	7.68	5.44	± 25	± 25
2.	Yellow	-4.95	1.50		
3.	Blue	9.55	5.07		

3. Water Absorption Test:(Gravimetric)

a) Temperature : 85 ±2 Deg.C

b) Duration : 336 Hours

Sl.No	Core Identification	Water absorbed in mg/cm^2	
		Observed values	Specified Value (Max)
1.	Red	0.019	1.0
2.	Yellow	0.019	
3.	Blue	0.023	

4. Shrinkage Test:

a) Temperature : 130 ±3 Deg.C

b) Duration : One Hour

Sl.No	Core Identification	Shrinkage in Percentage(%)	
		Observed values	Specified Value(Max)
1.	Red	1.13	4.0
2.	Yellow	1.21	
3.	Blue	1.31	

5. Hot Set Test:

Sl. No.	Core Identification	Observed Values(%)		Specified Values(Max) (%)	
		Hot set Elongation at 200^0 C	Permanent set Elongation	Hot set Elongation at 200^0 C	Permanent set Elongation
1.	Red	147.0	0.40	175	15
2.	Yellow	141.35	0.4		
3.	Blue	141.0	0.40		

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IV TESTS ON SEMICONDUCTING SCREEN:

1(a). Test for Thickness of conductor Semiconducting screen:

Sl. No.	Core Identification	Observed Values(mm)		Specified Values(mm)	
		Minimum	Nominal	Minimum	Nominal
1.	Red	0.826	0.987	0.51mm	0.70
2.	Yellow	0.922	1.022		
3.	Blue	0.929	1.006		

1(b). Test for Thickness of insulation Semiconducting screen

Sl. No	Core Identification	Observed Values(mm)		Specified Values(mm)	
		Minimum	Nominal	Minimum	Nominal
1.	Red	0.934	1.017	0.6 mm	0.8
2.	Yellow	0.839	0.987		
3.	Blue	0.934	1.029		

2. RESISTIVITY OF SEMICONDUCTING INSULATION SCREEN

Sl. No	Core Identification	Resistivity of insulation screen in Ω-m at 90^0 C			
		Observed Values		Specified Value (max)	
		Unaged Sample	Aged sample	Unaged sample	Aged sample
1.	Red	40.43	116.30	500	500
2.	Yellow	38.61	119.58		
3.	Blue	37.76	111.24		

3. RESISTIVITY OF SEMICONDUCTING CONDUCTOR SCREEN

Sl. No	Core Identification	Resistivity of Conductor screen in Ω-m at 90^0 C			
		Observed Values		Specified Value (Max)	
		Unaged Sample	Aged sample	Unaged Sample	Aged Sample
1.	Red	3.51	12.46	1000	1000
2.	Yellow	3.03	12.30		
3.	Blue	2.93	14.34		

4. Stripability Test for Insulation Screen:

a) Specified force required to remove 10 mm strip from the insulation : Between 4N to 45 N

b) Observed values:

Sl.No.	Core Identification	Force required to remove 10 mm strip for a length of 100 mm (N)	
		Unaged Sample	Aged Sample
1	Red	14.2	18.57
2	Yellow	16.4	14.27
3	Blue	14.87	13.2

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V. TESTS ON OUTER SHEATH:

1. Thickness:

i) Specified Nominal : 3.60 mm
ii) Specified minimum : 2.68 mm
iii) Observed Nominal : 3.74 mm
iv) Observed Minimum : 3.58 mm

2. Tensile Strength and Elongation at Break

A. Before Ageing:

Tensile Strength in N/mm^2		% Elongation	
Specified (min)	Observed	Specified (min)	Observed
12.5	17.14	150.0	297.15

B. Ageing:

Sample	Temperature	Duration
Dumb-bell Sample	100 ± 2^{0} C	168 Hours

C. After Ageing

Tensile Strength in N/mm^2		% Elongation	
Specified (min)	Observed	Specified (min)	Observed
12.5	16.92	150.0	278.45

D. Variations Observed from Before Ageing samples

Specified % Variations (Max)	Observed % Variations	
	Tensile Strength	% Elongation
±25%	-1.24	-6.29

E. Completed Cable Ageing:

(i) Ageing

Sample	*Temperature*	*Duration*
200 mm of completed Cable	100 ± 2^{0} C	168 Hours

(ii) Tensile Strength & Elongation at Break after Completed Cable Ageing:

Tensile Strength in N/mm^2		% elongation	
Specified (min)	Observed	Specified (min)	Observed
12.5	16.44	150.0	285.2

(iii) Variations Observed from Before Ageing samples

Specified % Variations (Max)	Observed % Variations	
	Tensile Strength	% elongation
±25%	-4.08	-4.02

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3. Loss of Mass:

Sample	Duration	Temperature	Loss of mass in mg/ cm^2	
			Specified (max)	Observed
Dumb-bell Specimens	168 Hours	100 $\pm 2^0$ C	1.5	0.88

4. Pressure Test at High Temperature:

a) Specified Percentage depth of indentation : 50 % (Max)
b) Observed Percentage depth of indentation : 21.16 %

5. Heat Shock Test:

a) **Requirement :** No Cracks or any other abnormalities should be observed after test.
b) **Result:** No Cracks or any other abnormalities were observed after test.

6. Elongation Test at Low Temperature:

a) Specified Elongation at Break at -15± 2°C: 20 % (min)
b) Observed Elongation at Break at -15± 2°C: 88 %

7. Impact Test at Low Temperature:

a) Test Temperature : -15 $\pm 2^0$ C
b) Mass of the Hammer : 1500 gms
c) Result : No Cracks were observed on the outer and inner surface of the Sheath after test.

VI. TESTS ON PVC BEDDING:

1. Thickness:

i) Specified Nominal : 2.0 mm
ii) Specified minimum : 1.4 mm
iii) Observed Nominal : 2.38 mm
iv) Observed Minimum : 2.15 mm

2. Tensile Strength and Elongation at Break

A. Before Ageing:

Tensile Strength in N/mm^2		% Elongation	
Specified (min)	Observed	Specified (min)	Observed
12.5	18.84	150.0	327.50

B. Ageing:

Sample	Temperature	Duration
Dumb-bell Sample	100 $\pm 2^0$ C	168 Hours

C. After Ageing

Tensile Strength in N/mm^2		% Elongation	
Specified (min)	Observed	Specified (min)	Observed
12.5	19.06	150.0	317.4

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D. Variations Observed from Before Ageing samples

Specified % Variations (Max)	Observed % Variations	
	Tensile Strength	% Elongation
±25%	1.19	-3.08

E. Completed Cable Ageing:

(i) Ageing

Sample	Temperature	Duration
200 mm of completed Cable	100 ± 2 ^{0} C	168 Hours

(ii) Tensile Strength & Elongation at Break after Completed Cable Ageing:

Tensile Strength in N/mm^2		% elongation	
Specified (min)	Observed	Specified (min)	Observed
12.5	18.78	150.0	329.80

(iii) Variations Observed from Before Ageing samples

Specified % Variations (Max)	Observed % Variations	
	Tensile Strength	% elongation
±25%	-0.33	0.70

3. Loss of Mass:

Sample	Duration	Temperature	Loss of mass in mg/ cm^2	
			Specified (max)	Observed
Dumb-bell Specimens	168 Hours	100 ±2^0 C	1.5	0.98

4. Heat Shock Test:

a) **Requirement** : No Cracks or any other abnormalities should be observed after test.

b) **Result:** No Cracks or any other abnormalities were observed after test.

5. Pressure Test at High Temperature:

a) Specified Percentage depth of indentation : 50 % (Max)

b) Observed Percentage depth of indentation : 25.71 %

6. Elongation Test at Low Temperature:

a) Specified Elongation at Break at -15± 2°C: 20 % (min)

b) Observed Elongation at Break at -15± 2°C: 109 %

VII. TESTS ON COPPER SCREEN:

1. Thickness:

a) Specified Minimum : 0.10 mm

b) Observed Minimum : 0.166 mm

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2. D.C Resistance of Copper Screen: (Three Cores Combined)

a) Specified Resistance in Ω/Km at 20° C : 0.542 Ω/Km at 20° C (Max)

b) Observed Resistance in Ω/Km at 20° C : 0.4980 Ω/Km at 20° C

VIII. FLAMMABILITY TEST

a) Time of application of flame : 480 seconds

b) Length of the unaffected portion of cable from the bottom of the top clamp

Specified : 50 mm (min)

Observed : 365 mm

IX . ELECTRICAL TESTS:

The following electrical tests were carried out in the order of sequence.

1. Partial Discharge Test:

a) Length of the sample : 11.35 metres

b) Sensitivity of the detector : 5 pC

c) Method of connection : High voltage applied to test core conductor and other cores shorted to grounded screen and armour.

d) Measuring voltage (1.73 Uo) :11 kV ac

e) Specified discharge magnitude at 1.73 Uo (Max) : 5 pC

f) Observed Discharge magnitude :

Sl.No.	Core Identification	Discharge magnitude in pC
1.	Red	Less than 5 pC
2.	Yellow	Less than 5 pC
3.	Blue	Less than 5 pC

2. Bending Test

a) Outer dia of conductor : 20.60 mm

b) Outer dia. Of Cable : 84.99 mm

c) Diameter of test cylinder : 1600 mm

d) Number of bending cycles : Three

3. Partial Discharge Test:

a) Length of the sample : 11.35 metres

b) Sensitivity of the detector : 5 pC

c) Method of connection : High voltage applied to test core conductor and other cores shorted to grounded screen and armour.

d) Measuring voltage (1.73 Uo) :11 kV ac

e) Specified discharge magnitude at 1.73 Uo (Max) : 5 pC

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f) Observed Discharge magnitude :

Sl.No.	Core Identification	Discharge magnitude in pC
1.	Red	Less than 5 pC
2.	Yellow	Less than 5 pC
3.	Blue	Less than 5 pC

4. Tan Delta measurement as a function of Voltage:

a) Specified tan delta at Uo (Max) : 0.004
b) Specified increment from 0.5 Uo to 2Uo : 0.002 (Max)
c) Ambient temperature : 29 ^{0}C
d) Observed Values:

Sl. No	Core Identification	Test Voltage (kV) ac	Tan delta (Abs Value)	Capacitance in pF	Increment of Tan Delta
1.	Red	3.20	0.00025	4976.6	
		6.35	0.00031		
		12.7	0.00036		+0.00011
2.	Yellow	3.20	0.00024	4939.3	
		6.35	0.00033		
		12.7	0.00039		+0.00015
3.	Blue	3.20	0.00022	5001.0	
		6.35	0.00032		
		12.7	0.00042		+0.00020

5. Tan Delta measurement as a function of Temperature:

a) Temperature of the conductor during test : 98 ^{0} C
b) Test Voltage during measurement : 2 kV ac
c) Specified Tan delta(Max) : 0.004
d) Observed Values:-

Sl.No.	Core Identification	Capacitance in pF	Tan delta At 98^{0} C
1.	Red	4682.6	0.00071
2.	Yellow	4630.2	0.00070
3.	Blue	4719.1	0.00068

6. Heating Cycle Test:

a) Conductor Temperature during Heating Cycle : 95 -100^{0} C
b) Total Duration of Heating cycle : 8 hours
c) Heating period after attaining Temperature : 2 hours
d) Natural Cooling Period : 3 hours
e) Number of heating cycles : 20 Only

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7. Partial Discharge Test:

a) Length of the sample : 11.35 metres
b) Sensitivity of the detector : 5 pC
c) Method of connection : High voltage applied to test core conductor and other cores shorted to grounded screen and armour
d) Measuring voltage (1.73 Uo) :11 kV ac
e) Specified discharge magnitude at 1.73 Uo (Max) : 5 pC
f) Observed Discharge magnitude :

Sl.No.	Core Identification	Discharge magnitude in pC
1.	Red	Less than 5 pC
2.	Yellow	Less than 5 pC
3.	Blue	Less than 5 pC

8.Impulse Withstand Test:

Test Voltage kV_{peak}	Temperature of Conductor during Test(^{0}C)	Ambient Temperature (^{0}C)		No. of Impulses
		Dry Bulb	Wet Bulb	
75	95-100	29	26	10 Positive & 10 Negative

Test Connection	The impulse source was connected to the conductor of the particular core (ends shorted) under test and the screen connected to ground. The conductors of the other two cores which were not under test were shorted together with screen and connected to ground.
Test Result	The three cores of cable withstood ten positive and ten negative polarity lightning impulse voltage applications of 75 kV peak.

Core	Polarity	Shot Number	Oscillogram Number
Red	Positive	First	1700
		Tenth	1706
	Negative	First	1713
		Tenth	1718
Yellow	Positive	First	1722
		Tenth	1727
	Negative	First	1731
		Tenth	1736
Blue	Positive	First	1740
		Tenth	1746
	Negative	First	1748
		Tenth	1754

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9. High Voltage Test: (After Impulse Test)

a) Test connection : High voltage connected to test core conductor & other cores shorted to grounded shield and armour
b) Test Voltage : 21 kV ac
c) Duration of test : Fifteen Minutes
d) Ambient Temperature : 30 ^{0}C
e) Length of Sample : 11.35 metres
f) Result

Sl.No.	Core Identification	Remarks
1.	Red	WITHSTOOD
2.	Yellow	WITHSTOOD
3.	Blue	WITHSTOOD

10. High Voltage Test: (Type Test)

a) Test connection : High voltage connected to test core conductor & other cores shorted to grounded shield and armour
b) Test Voltage : 25.4 kV ac
c) Duration of test : Four Hours
d) Ambient Temperature : 30 ^{0}C
e) Length of Sample : 11.35 metres
f) Result

Sl.No.	Core Identification	Remarks
1.	Red	WITHSTOOD
2.	Yellow	WITHSTOOD
3.	Blue	WITHSTOOD

11. VOLUME RESISTIVITY OF INSULATION:

Sl.No	Core Identification	Observed Volume Resistivity in Ω-cm		Specified Volume Resistivity in Ω-cm(Min)	
		at 27 ^{0}C	at 90 ^{0}C	at 27 ^{0}C	at 90 ^{0}C
1.	Red	5.62 X 10^{16}	2.07 X 10^{16}	Not Specified	1 x 10^{12}
2.	Yellow	2.57 X 10^{16}	1.93 X 10^{16}		
3.	Blue	2.83 X 10^{16}	1.97 X 10^{16}		

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12. INSULATION RESISTANCE CONSTANT:

Sl.No	Core Identification	Observed Insulation Resistance Constant in MΩ-km		Specified Insulation Resistance Constant in MΩ-km (min)	
		at 27 ^{0}C	at 90 ^{0}C	at 27 ^{0}C	at 90 ^{0}C
1.	Red	205984.1	75965.8	Not Specified	3.67
2.	Yellow	94153.7	70852.7		
3.	Blue	103795.5	72313.6		

X. Cable Construction & Markings:

a) **Construction : As per the Drawing Enclosed.**
b) **Core Markings: Marking by coloured strips of Red Yellow and Blue**
c) **Strippability of Conductor Screen: Semiconductor layer along with Insulation was easily strippable with out any semiconducting traces on the Conductor.**
d) **Suitability of Filler Material: At the end of all electrical tests, the outersheath was cut open and examined the filler material . no deterioration was observed.**
e) **Cable Embossing : ELECTRIC CABLE 6.35/11 KV,3X300 SQ.MM AL/XLPE/SWA/PVC NATIONAL CABLES INDUSTRY UAE 2012 PO. NO.45000060994**

XI. Conclusion: The sample meets all the type test requirement of specification IEC 60502-2-2005 & EDD 7-2004.

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Tele/Fax: +91 (0) 80-2360 4435

CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT

Test Report No.:DCCD-12647 **Date:07.06.2012**

NOTE

a) The test results relate only to the item(s) tested.

b) Publication or reproduction of this test report in any form other than by complete set of the whole report and in the language written, is not permitted without the written consent of CPRI.

c) Any Correction/erasure invalidates the test report.

d) NABL has Accredited this laboratory as per ISO 17025-2005 standard for the tests carried out.

e) Any anomaly/discrepancy in this test report should be brought to the notice of CPRI within 45 days from the date of issue.

(Thirumurthy)
TEST ENGINEER

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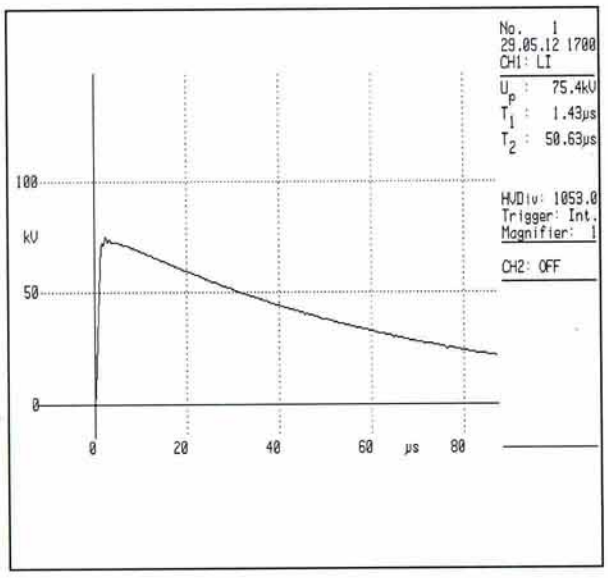
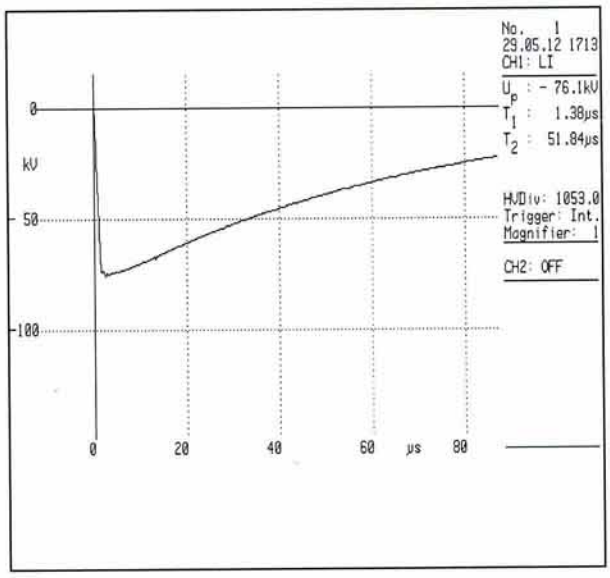
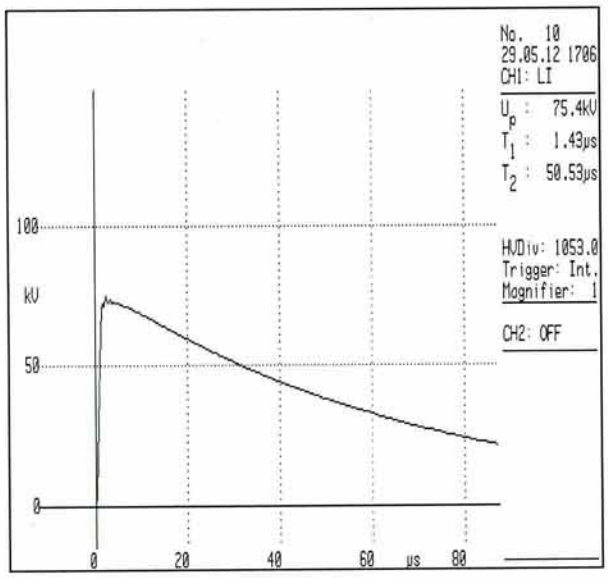
CENTRAL POWER RESEARCH INSTITUTE

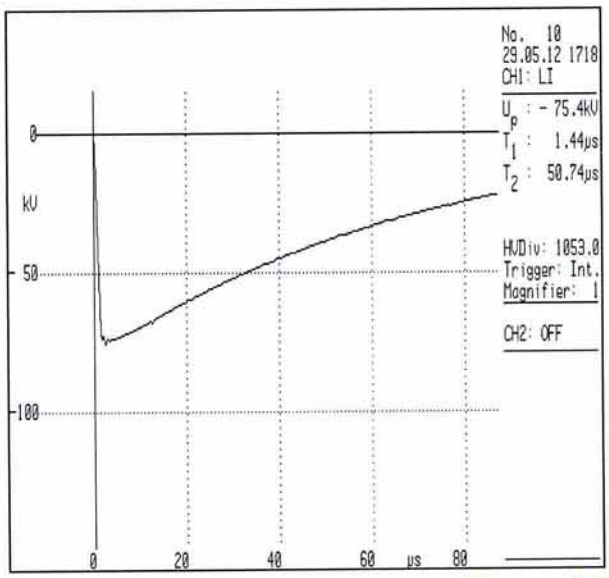
CPRI

Customer : M/s. National Cables Industry., Sharjah.
Test Report No.& Date : DCCD- 12647 Dated 07.06.2012
Sample Code : DCCDCAB12S0069
Core : Red









(Thirumurthy)
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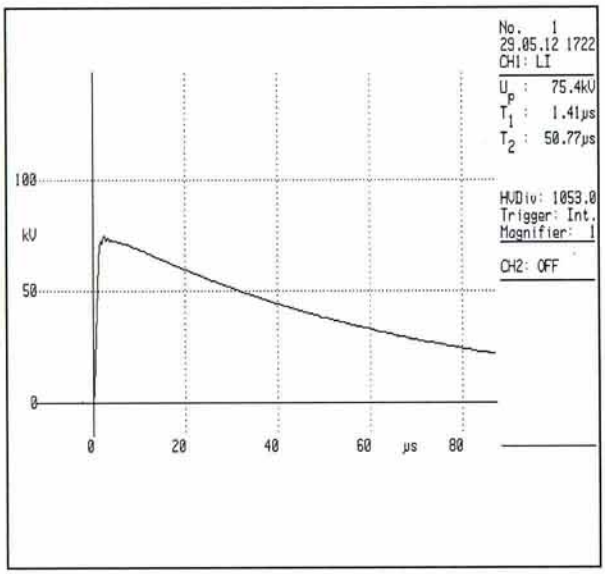
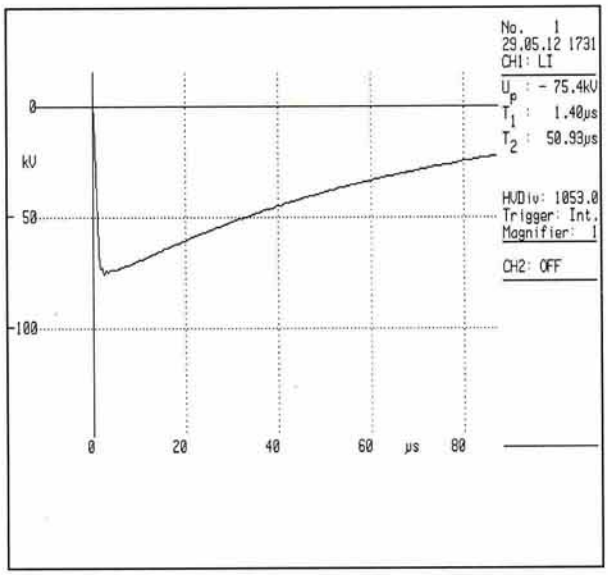
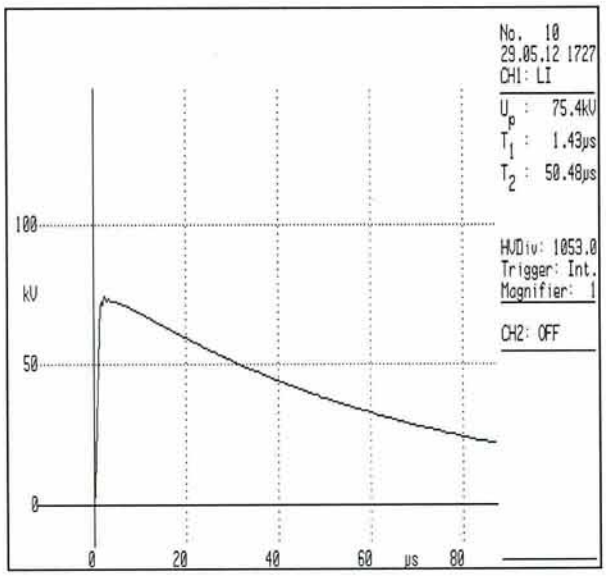
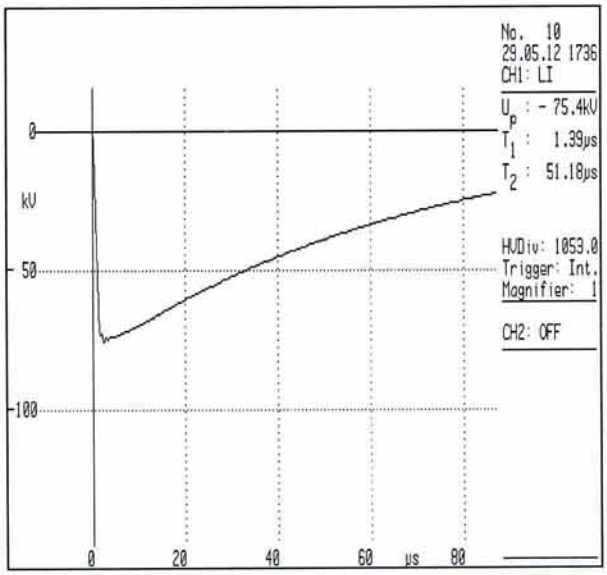
CPRI

Customer : M/s. National Cables Industry., Sharjah.
Test Report No.& Date : DCCD- 12647 Dated 07.06.2012
Sample Code : DCCDCAB12S0069
Core : Yellow









(Thirumurthy)
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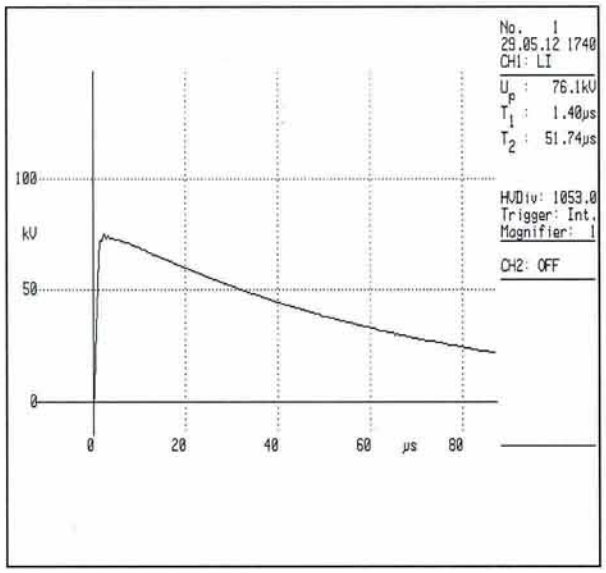
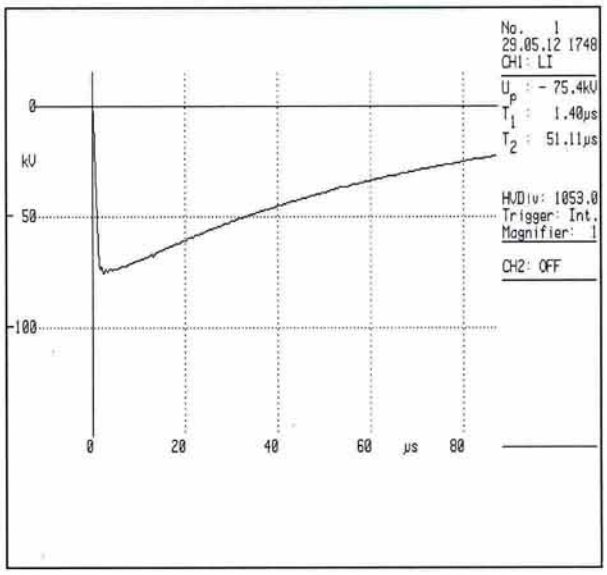
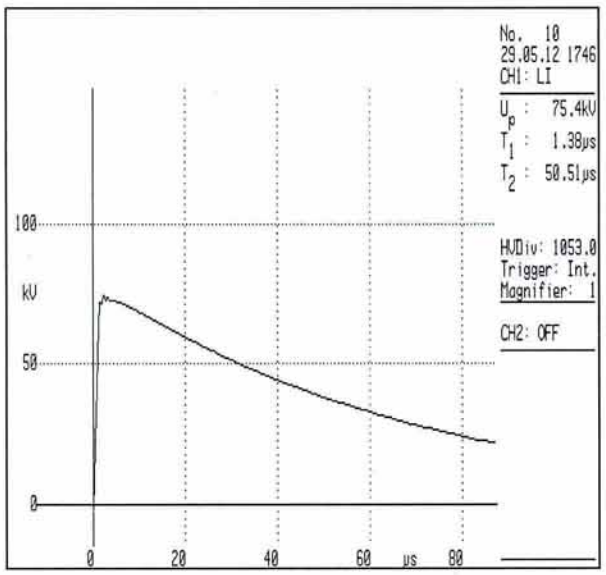
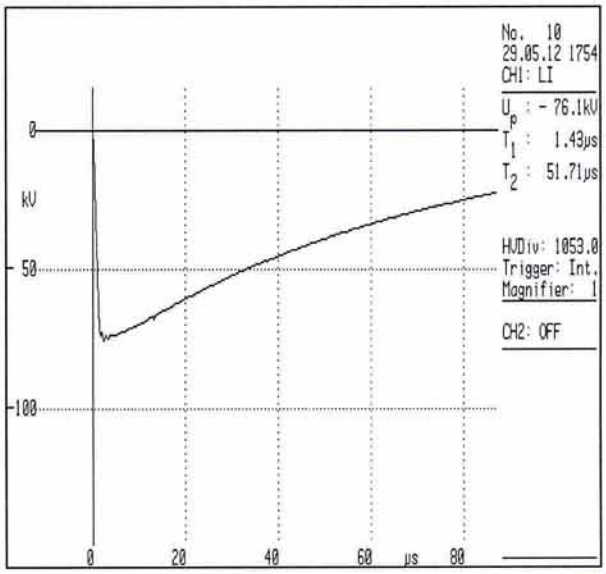
CPRI

Customer : M/s. National Cables Industry., Sharjah.
Test Report No.& Date : DCCD-12647 Dated 07.06.2012
Sample Code : DCCDCAB12S0069
Core : Blue









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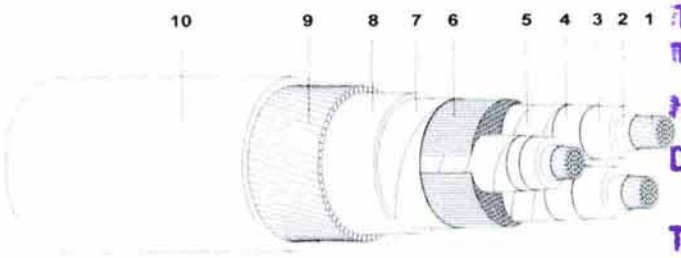
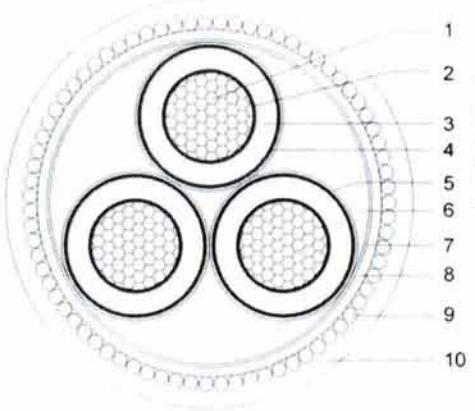
6.35/11 (12) kV, 3 CORES, XLPE INSULATED, CU TAPE SCREENED GALVANIZED STEEL WIRE ARMOURED AND PVC SHEATHED (AL/XLPE/SWA/PVC) POWER CABLES

Applicable Standard : IEC 60502-2 and CSDP specs ED 7: 2004 and AMD 1 of Jan 1994



THIS DRAWING PERTAINS TO CPRI TEST REPORT
No. DCCD: 12647
Dated: 07-06-2012
Test Engineer

TECHNICAL & QC NCI DEPT



Core Identification:
Red, Yellow, Blue coloured strips over insulation screen throughout the length of the cable

3x300mm² AL/XLPE/SWA/PVC 11 kV Cable

SL	COMPONENT	DESCRIPTION	DETAILS
1	Conductor	Aluminium, Round Stranded Compacted	61x2.54 mm (before compaction)
2	Conductor Screen	Extruded semi-conductive compound	Nominal 0.7 mm, Minimum 0.51 mm
3	Insulation	Extruded Cross linked Polyethylene (XLPE)	Nominal 3.4 mm, Minimum 2.96 mm
4	Insulation Screen	Extruded semi-conductive compound, strippable	Nominal 0.8 mm, Minimum 0.6 mm
5	Metallic screen	Copper Tapes applied with suitable overlap	Minimum 0.1 mm
6	Fillers	Polypropylene strings	Suitable for 90 °C conductor temperature
7	Binding Tape	Polypropylene Tapes	Approximate thickness 0.125 mm
8	Bedding	Extruded Polyvinyl Chloride (Type ST2/Type 9)	Nominal 2.0 mm, Minimum 1.4 mm
9	Armour	Galvanized Round Steel Wires	Nominal 3.15 mm
10	Outer Sheath	Extruded Polyvinyl Chloride (Type ST2/Type 9) Colour: BLACK	Nominal 3.6 mm, Minimum 2.68 mm

Embossing Details on PVC Outer sheath along one line:

ELECTRIC CABLE - 6.35/11 kV, 3x300 MM², AL/XLPE/SWA/PVC
NATIONAL CABLES INDUSTRY, U.A.E., YEAR, PO. NO. 45000060994

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GULF EXCELLENCE AWARD 2006