

ELECTRICAL RESEARCH AND DEVELOPMENT ASSOCIATION
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TEST REPORT

CUSTOMER'S NAME AND ADDRESS:	REPORT NO	: I.05/11/1179-2a
M/s Diamond Cables Ltd.	DATE	: 24-3-05
P.O. Box No. 3008	YOUR REF	: -
Essen House	DATED	: 19-3-05
5/12, BIDC, Gorwa	TEST SPECN. NO	: IS:694-1990
BARODA 390 016.	DATE OF SAMPLE	: 30-12-05
	RECEIPT	
	DATES OF TESTING:	06-01-05 to 21-01-05

SAMPLE DESCRIPTION/IDENTIFICATION NO :

4 cores x 6.0 sq mm PVC insulated
 and Yellow colour outer sheathed cable,
 Type of Insulation - A,
 Type of sheath - ST1,
 Grade of Aluminium conductor - H2,
 Class of Aluminium conductor - 1.
 Embossing: DICABS (R) 1100V IS 694/1990

No. CI.No.	Tests	Requirement	Obtained value
1.	15.1.a	Test on conductor	
	2)	Tensile strength test N/mm ²	Above 100 & upto and including 150. Red 104 Yellow 103 Blue 107 Black 107
	3)	Wrapping test	To pass the test Red Passes Yellow Passes Blue Passes Black Passes
	4)	Conductor resistance at 20°C. ohm/km	Max.4.61 Red 4.37 Yellow 4.35 Blue 4.36 Black 4.34

Note: Issuing this ammendment report no. I.05/11/1179-2a (Sheet 1 of 5) dated 24-3-05 to our Report No. I.05/11/1179-2 sheet 1 of 5 dtd 28-01-05.

Tested by
 P. J. J. C. Tech. Assistant
 Scientist
 Head of Division

N O T E:

1. This report relates only to the particular sample received for testing at ERDA.
2. This report cannot be reproduced in part under any circumstances.
3. Publication of this report requires permission in writing from Director, ERDA.
4. Only the tests asked for by the party has been carried out.

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1	2	3	4	5
2.	15.1.b	Test for overall dimensions & thickness of insulation and sheath		
	a)	Thickness of insulation (mm)	Nom. 0.8/ Min. 0.62	Red 0.9/0.76 Yellow 0.9/0.71 Blue 1.0/0.84 Black 1.2/0.93
	b)	Outer sheath (mm)	Nom. 1.2 Min. 0.76	2.0 1.40
	c)	Overall diameter, mm	Max. 15.5	15.4
3.	15.1.c	Physical tests for insulation and sheath		
		Insulation		
	1)	Tensile strength and Elongation at break		
		- Tensile strength, N/mm ²	Min. 12.5	Red 18.8 Yellow 18.0 Blue 19.4 Black 17.2
		- Elongation at break, %	Min. 150	Red 225 Yellow 250 Blue 288 Black 200
	2)	Loss of mass test at 80±2°C for 168 hrs.		
		- Loss of mass, mg/cm ²	Max. 2	Red Less than 1 Yellow Less than 1 Blue Less than 1 Black Less than 1
	3)	After ageing in air oven at 80±2°C for 168 hr.		
		- Tensile strength, N/mm ²	Min. 12.5	Red 18.2 Yellow 16.8 Blue 18.7 Black 16.4
		- Elongation at break, %	Min. 150	Red 210 Yellow 250 Blue 273 Black 200



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(B) Insulation resistance constant, M-ohm-km

- At 27±2°C	Min. 36.7	Red 75.4 Yellow 76.5 Blue 69.4 Black 62.3
- At 70±2°C	Min. 0.037	Red 0.633 Yellow 0.490 Blue 0.491 Black 0.548

5. 15.1.e High voltage test (Water immersion)

- AC test	Insulation shall withstand 3 kV rms followed by 6 kV (rms) for 5 min. after 24 hrs water immersion at 60±3°C.	All cores pass
- DC test	Insulation shall withstand 1.2 kV DC for 240 hrs. at 60±3 °C.	All cores pass

6. 15.1.f Flammability test

- Period of burning after removal of flame, sec.	Max. 60	Nil
- Unaffected portion from the lower edge of the top clamp, mm.	Min. 50	350

Tested by

P. J. Patel

Tech.Assistant

[Signature]

Scientist

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Variation, in %

- Tensile strength	Max. ± 20	Red -3 Yellow -7 Blue -4 Black -5
- Elongation at break	Max. ± 20	Red -7 Yellow Nil Blue -5 Black Nil
4) Shrinkage test, at 150°C for 15 minutes		
- Shrinkage, %	Max. 4	Red 1 Yellow 2 Blue Less than 1 Black 2
5) Heat shock test at 150°C for 1 hr.		
- Visual examination	No sign of crack or scale shall be observed	All cores pass
6) Hot deformation at 80 \pm 2°C for 4 hrs		
- Depth of indentation, %	Max. 50	Red 41 Yellow 35 Blue 34 Black 36

Outer sheath

1) Tensile strength & Elongation at break		
- Tensile strength, N/mm ²	Min. 12.5	16.8
- Elongation at break, %	Min. 150	223
2) Loss of mass test at 80 \pm 2°C for 168 hrs.		
- Loss of mass, mg/cm ²	Max. 2	1

Tested by

P. J. Shale

Tech. Assistant

[Signature]
Scientist

No S20397