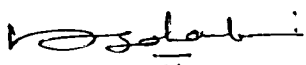






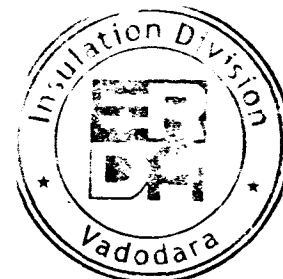
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 Fax : +91 (0265) 2638382.
 E-mail : erda@erda.org , dir@erda.org , phv@erda.org, ins@erda.org, plv@erda.org, mtd@erda.org
 tdc@erda.org. ene@erda.org

TEST REPORT	
SHEET 1 of 7	
NAME & ADDRESS OF CUSTOMER M/s Diamond Cables Limited Essen House, 5/12, BIDC, Gorwa, Baroda-390 016.	REPORT NO. : ICWRWO0052938-2 DATE : 16-09-2007
	CUSTOMER REF NO : Nil DATED : 25-07-2007
	DATE OF SAMPLE RECEIPT 27-07-2007
	DATES OF TESTING 29-07-07 to 12-09-07
SAMPLE DESCRIPTION 3.5 Core x 50 Sq.mm PVC insulated & Yellow coloured PVC outer sheathed unarmoured Cable Type of Insulation : A Type of outer sheath : ST1 Class of shaped Aluminium conductor: 2, Inner sheath- Black colour.	SAMPLE IDENTIFICATION Embossing: DICABS ^R ELECTRIC 1100 VOLTS IS:1554 PART 1/1988
TEST DETAILS As per sheet 2 of 7	TEST SPECIFICATION IS: 1554 (Part 1)-1988
REMARK : The sample conforms to the requirements for all the mentioned tests.	
 PREPARED BY	 CHECKED BY
 APPROVED BY	
NOTE: 1. This report relates only to the particular sample received for testing in good condition at ERDA. 2. This report cannot be reproduced in part under any circumstances. 3. Publication of this report requires prior permission in writing from Director, ERDA. 4. Only the tests asked for by the customer have been carried out.	

No 1687864





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REPORT NO. : ICWRWO0052938-2

SHEET 2 of 7

DATE : 16-09-2007

TEST DETAILS:

Test Specification: IS:1554 (Pt.1)-1988

Sr. No.	Cl.No.	Test Particulars
1.	15.1.a (1)	Annealing test
	15.1.a (2)	Tensile test
	15.1.a (3)	Wrapping test
	15.1.a (4)	Conductor Resistance test
2.	15.1.b	Tests for Armouring
3.	15.1.c	Test for thickness of Insulation and Sheath
4.	15.1.d	Physical tests for Insulation and Sheath
	(1)	Tensile Strength and Elongation at break
	(2)	Ageing in Air Oven
	(3)	Shrinkage test
	(4)	Hot Deformation test
	(5)	Loss of mass test
	(6)	Heat Shock test
	(7)	Thermal Stability test
5.	15.1.e	Insulation Resistance test
6.	15.1.f	High Voltage test (Water immersion)
7.	15.1.g	High Voltage at Room Temperature
8.	15.1.h	Flammability test

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SHEET 3 of 7

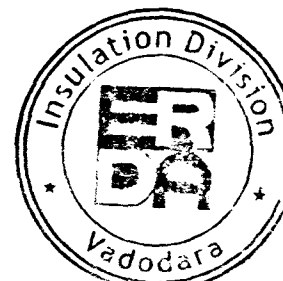
Sr. No.	Cl.No.	Tests	Requirement as per Specification	Obtained Value	Remarks
1.	15.1.a	Tests on conductor			
	1	Annealing test	Not applicable	-	-
	2.	Tensile test	Not applicable	-	-
	3.	Wrapping test	Not applicable	-	-
	4.	Conductor Resistance (Corrected at 20°C), ohm/km			
		- Main Conductor	Max. 0.641	Red 0.640 Yellow 0.639 Blue 0.634	Conforms
		-Neutral Conductor	Max. 1.20	Black 1.13	
2.	15.1.b	Tests for Armouring	Not applicable	-	-
3.	15.1.c	Test for thickness of Insulation and Sheath.			
		-Thickness, mm			
	A]	Insulation			
		-Main Conductor	Nom./Min. 1.4/1.16	Red 1.6/1.46 Yellow 1.9/1.72 Blue 1.6/1.49	Conforms
		-Neutral Conductor	1.2/0.98	Black 1.2/1.14	
	B]	Inner sheath	Min. 0.3	0.6	Conforms
	C]	Outer sheath	Nom./Min. 2.2/1.56	2.3/2.14	Conforms

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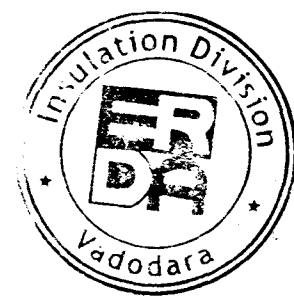


REPORT NO. : ICWRWO0052938-2 SHEET 4 of 7
 DATE : 16-09-2007

Sr. No.	Cl.No.	Tests	Requirement as per Specification	Obtained Value	Remarks						
4.	15.1.d	Physical tests for Insulation and Sheath Insulation									
						1. Tensile Strength and Elongation before ageing	Tensile Strength, N/mm ²	Min. 12.5	Red	21.2	Conforms
									Yellow	19.7	
									Blue	20.2	
									Black	21.6	
						- Elongation at break, %		Min. 150	Red	300	Conforms
									Yellow	315	
									Blue	305	
									Black	295	
						2. After ageing in Air Oven (at 80 ± 2° C for 168 hrs.)	Tensile Strength, N/mm ²	Min. 12.5	Red	20.2	Conforms
									Yellow	18.8	
									Blue	18.8	
Black	23.4										
- Elongation at break, %		Min. 150	Red	290	Conforms						
			Yellow	288							
			Blue	280							
			Black	273							
- Variation, % Tensile Strength		Max. ± 20	Red	-5	Conforms						
			Yellow	-5							
			Blue	-7							
			Black	+8							
- Elongation at break		Max. ± 20	Red	-3	Conforms						
			Yellow	-9							
			Blue	-8							
			Black	-7							

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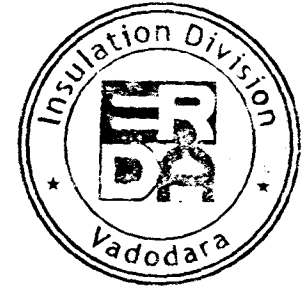
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REPORT NO. : ICWRWO0052938-2 SHEET 5 of 7
 DATE : 16-09-2007

Sr. No.	Cl.No.	Tests	Requirement as per Specification	Obtained Value	Remarks
3.		Shrinkage test (at 150 ± 2°C for 15 min.)			
-		Shrinkage, %	Max. 4	Red <1 Yellow <1 Blue <1 Black <1	Conforms
4.		Hot deformation (at 80 ± 2°C for 6 hrs.)			
-		Depth of indentation, %	Max. 50	Red 25 Yellow 26 Blue 24 Black 27	Conforms
5.		Loss of mass test (at 80 ± 2°C for 168hrs.)			
-		Loss of mass, mg/cm ²	Max. 2	Red <1 Yellow <1 Blue <1 Black <1	Conforms
6.		Heat shock test (at 150 ± 2°C for 1 hr)			
			No sign of crack or scale shall be observed.	No sign of crack or scale was observed.	All cores Conforms
7.		Thermal Stability test at 200°C, minute	Min. 80	Red 170 Yellow 171 Blue 174 Black 175	Conforms
Outer sheath					
1.		Tensile Strength and Elongation before ageing			
-		Tensile Strength, N/mm ²	Min. 12.5	16.2	Conforms
-		Elongation at break, %	Min. 150	305	Conforms
2.		After ageing in Air Oven (at 80 ± 2°C for 168 hrs.)			
-		Tensile Strength, N/mm ²	Min. 12.5	15.2	Conforms
-		Elongation at break, %	Min. 150	283	Conforms
-		Variation, %			
-		Tensile Strength	Max. ± 20	-6	Conforms
-		Elongation at break	Max. ± 20	-7	Conforms

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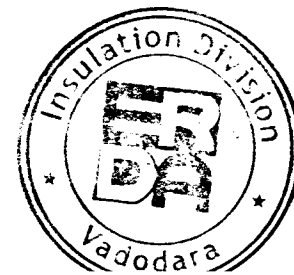
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 DATE : 16-09-2007

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Sr. No.	Cl.No.	Tests	Requirement as per Specification	Obtained Value	Remarks
5.	15.1.e	3. Shrinkage test (at 150 ± 2° C for 15 min.) - Shrinkage, %	Max. 4	1	Conforms
		4. Hot deformation (at 80 ± 2° C for 6 hrs.) - Depth of indentation, %	Max. 50	30	Conforms
		5. Loss of mass test (at 80 ± 2° C for 168hrs.) - Loss of mass, mg/cm ²	Max. 2	1	Conforms
		6. Heat shock test (at 150 ± 2° C for 1 hr) - Visual examination	No sign of crack or scale shall be observed.	No sign of crack or scale was observed.	Conforms
		7. Thermal Stability test at 200° C, minute	Min. 40	95	Conforms
		A] Insulation resistance Volume resistivity, Ohm-cm - at 27 ± 2° C	Min. 1 x 10 ¹³	Red 9 x 10 ¹³ Yellow 1 x 10 ¹⁴ Blue 1 x 10 ¹⁴ Black 4 x 10 ¹³	Conforms
		- at 70 ± 2° C	Min. 1 x 10 ¹⁰	Red 4 x 10 ¹¹ Yellow 5 x 10 ¹¹ Blue 3 x 10 ¹¹ Black 6 x 10 ¹¹	Conforms
B]	Insulation Resistance constant, M-ohm km - at 27 ± 2° C	Min. 36.7	Red 333.6 Yellow 467.0 Blue 444.7 Black 132.4	Conforms	
		Min. 0.037	Red 1.379 Yellow 1.779 Blue 1.067 Black 2.190	Conforms	

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DATE : 16-09-2007

SHEET 7 of 7

Sr. No.	Cl.No.	Tests	Requirement as per Specification	Obtained Value	Remarks
6.	15.1.f	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 $60 \pm 3^{\circ}\text{C}$.	All cores withstood	Conforms
		- DC test	Insulation shall withstand 1.2 kV DC for 240 hrs. at $60 \pm 3^{\circ}\text{C}$.	All cores withstood	Conforms
7.	15.1.g	High Voltage test -at room temperature	To withstand 3 kV rms for 5 minutes for each test connection	All cores withstood	Conforms
8.	15.1.h	Flammability test			
		- Period of burning after removal of flame, seconds	Max. 60	Nil	Conforms
		- Unaffected portion from the lower edge of the top clamp, mm	Min. 50	335	Conforms

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