

Telegram : 'ASSURELEC'
BANGALORE
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Ref No. 616477 / P / CD

By Regd Post
GOVERNMENT OF INDIA
MINISTRY OF DEFENCE (DGQA)
CONTROLLERATE OF QUALITY
ASSURANCE (ELECTROINCS)
J C NAGAR POST BOX No. 606,
BANGALORE - 560 006

13 Oct 2006

To

M/s Miracle Cables (India) Pvt. Ltd
Miracle House, Plot No. A 571,
TTC Industrial Area,
M.I.D.C. Mahape, Navi,
Mumbai - 400 701

PAYMENT TESTING OF UNINYVIN SIZE 2 & 0000 CABLES
AGAINST JSS : 6145 - 04 / 1998

Dear Sir,

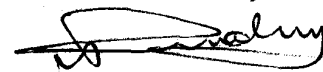
Ref : a) Your letter No. MCIPL/CVRD/52/06-07 dated 16 June 2006
b) Our letter of even No. dated 06 July 2006.

- 2 The subject (Two type) of samples forwarded vide your letter at ref (a) above, have been tested as per governing specification JSS : 6145 - 04 / 1998 and found satisfactory. A copy of test report is enclosed in Appendix 'A' to this letter.
3. Samples have been expended during the tests.

Thanking You,

Encl : As above,

Yours Sincerely



(A PANDEY)
Lt Col
for Controller

TEST REPORT

Appendix 'A'

Nomenclature : CABLE UNINVINMET TYPE - 2 and UNINVINMET TYPE - 0000
 Manufacturer : MIRACLE CABLES (INDIA) PVT LTD, NAVI MUMBAI
 Specification No : JSS : 6145 - 04 /1998
 Type of Testing : PAYMENT TESTING

Srl No	Spec Cl Ref	Test Details	Requirement (Size)	Observation (Size)	Remarks
1.	9.7.1.1	Physical Examination In accordance with class 7	2 The cable shall be inspected for workmanship and finish	2 Found as per requirement	Satisfactory
2.	9.7.1.2 Table 4& 5	Dimensions Nominal area of conductor in sq mm No. of wires in conductor. Nominal dia of conductor in mm Dia of conductor in mm (Min) (Max) Radial thickness of insulation (Min)	33.3 sq mm 203 0.46 mm 8.13 mm 8.76 mm 0.48 mm	109 sq mm 666 0.46 mm 14.86 mm 15.6 mm 0.787mm	Satisfactory Satisfactory Satisfactory Satisfactory Satisfactory
3.	9.7.2.1	Overall dia in mm (Min) (Max) Conductor resistance at 20° C for 900 Mtrs (Max)	10.5 mm 11.0 mm 0.517	17.9 mm 18.7 mm 0.158	Satisfactory
4.	9.7.3 IS 8130 6.1.1	Tinning Test	Max copper dissolved 3 gms per sq mm	0.355 Ohms/ 900 M 0.0594 gms/ sq mm	Satisfactory
5.	9.7.4 Table-15	Tensile Strength of conductor (Max) Elongation (Min)	2205 KPa 13.5 %	1663.3 KPa 29 %	Satisfactory Satisfactory


Contd-2

S/II No	Spec Cl Ref	Test Details	Requirement (Size)	Observation (Size)	Remarks	
6.	9.7.6 IS: 5831/84 Table - 1	Insulation Elongation at break temp 115°C +0 -2° C for 60 days and cooling for 16 hrs	2 unaged value 125% (Min) After ageing value 125%(Min) Variation 20% (Max)	2 193% 177% 8.2%	228% 219.5% 3.9%	Satisfactory Satisfactory Satisfactory
7.	9.7.7.1 Table 12	Voltage test on core immersed in water for 12 hrs	1.5 KVA	Withstood	Satisfactory	
8.	9.7.7.2 Table - 13	Voltage test on completed cable	1.5 KVA	Withstood	Satisfactory	
9.	9.7.9 Table - 12	Insulation Resistance (core stage)	13.5 Mega Ohm KM	96.6 M ohms KM 73.5 M ohms KM	Satisfactory	
10.	9.7.11 Table - 7	Resistance to fluids Aviation turbine fuels (Kerosene) at 20° ±5° C for 24 Hrs Fuel:70% Iso-Octane & 30% Toluene at 20°±5° C for 24 hrs Hydraulic fluid-80% Ethylene Glycol mono Ethyl Ether 20% Castor oil by volume 50° ±2° C for 24 hrs Hydraulic fluid-Ester based hydraulic fluid 50° ± 2°C, Ester based lubricating oil 100° ±2°C	Maximum change in diameter 5%	No change in diameter No splitting or cracking or other deterioration Ester based hydraulic fluid & Ester based lubricating oil	Satisfactory Facility not available.	
11.	9.7.13	Flexibility Test	The cable shall show no sign of damage\ it shall withstand HV test	No sign of damage Withstood	Satisfactory	
12.	9.7.15	Pliability Test	-----	-----	Not applicable	
13.	9.7.16	Flammability test:	-----	-----	Not applicable	

Contd - 3

Srl No	Spec Cl Ref	Test Details	Requirement (Size) 0000	Observation (Size) 0000	Remarks
14	9.7.17	Ageing in Air at 120° ± 2° C for 120 hrs	It shall withstand 1500 V for 5 minutes and there shall be no pitting of conductor	2 HV Withstood No pitting of conductor	Satisfactory
15	9.7.17.2	Bend test	-----	-----	Not applicable
16	9.7.17.3	Dielectric strength after ageing 120° ± 2° C for 120 hrs The cable shall be immersed in water for 5 hrs	It shall withstand HV test 1500 V for 5 minutes	Withstood	Satisfactory
17	9.7.18	Low temperature	-----	-----	Not applicable
18	9.7.19	Heat test at 115° C for 1 hour	There shall be no sticking of cable	No sticking of cable	Satisfactory
19	9.7.20.1	Combined humidity & temperature test	There shall be no sign of deterioration It shall with HV test at 1500 V there shall be no breakdown IR shall not be less than 3.5 M ohm KM	No visual deterioration Withstood 32.5 M Ohm 26.25 M ohm KM KM	Satisfactory
20	9.7.20.2	Resistance to fungus growth	The cable mark and year of mfr of cable shall be visible and there shall be no mould growth on the cable	Mark and Year of mfr are clear & No mould growth Observed	Satisfactory
21	9.7.20.3.1	Tropical exposure at higher temp 35 ± 1° C for 12 hrs and lower temperature 20 ± 5° C for 5 hours for 28 days	The cable shall show no sign of damage. The cable shall withstand 1500 V IR shall not be less than 3.5 M ohm KM	No sign of damage Withstood 32.25 M ohms 26.25 M ohms KM KM	Satisfactory

Date: 13 Oct 2006


 (A PANDEY)
 Lt Col
 For Controller