

INTERNATIONAL CENTRE FOR AUTOMOTIVE TECHNOLOGY

[A Division of NATRiP Implementation Society (NATIS), Govt. of India]

Non-Transferable

TEST REPORT



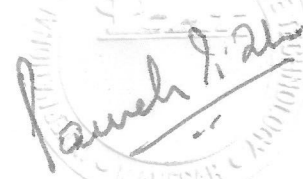
C T O G N O 1 0 8

Date: 02.04.2018

- 1.0 NAME AND ADDRESS OF THE CUSTOMER : M/s. Autotronics Industries Private Limited
918, Sector-16/17, Hisar-01662
Haryana INDIA.
- 2.0 CUSTOMER REFERENCE : CCTEAINLNAEEG57274 dated 10-Jan-2018
- 3.0 NAME AND ADDRESS OF THE MANUFACTURER : M/s Dudeja Interconnect System Pvt. Ltd.,
19- B, Industrial Area, Opp. Whirlpool Of India Ltd.
N.I.T., Faridabad- 121001
- 4.0 DESCRIPTION OF DEVICE UNDER TEST (DUT):
DUT Name: Electrical Wires
Part No.: ACNG-02
Model No. : Automotive Harness
Wire Type: PVC Insulated Wires
Application: For three and Four Wheeler
Wire Size: 0.35 Sq mm / 0.5 Sq mm / 0.75 Sq mm / 1.00 Sq mm / 1.50 Sq mm
- 5.0 TEST OBJECTIVE :
To conduct the tests given in Sr. No. 7.0 of Annexure-I of this report as per as per AIS 026(Ver.3) & AIS: 028(Ver.3) for the PVC Insulated AVSS Wires on test sample mentioned in Sr. No. 4.0 above.
- 6.0 CONCLUSION:
Wires specified in Sr. No. 4.0 of this test report MEETS the requirements as per AIS 026(Ver.3) & AIS: 028(Ver.3). Results and test summary are mentioned in Annexure-I of this report.

Disclaimer

This test report pertains only to the test samples / components / parts/ assemblies/ gensets/ materials /fuels/chemicals/engines/vehicles/Agri. Tractors etc. actually tested /witnessed / verified by ICAT in the presented condition based on the documents / information produced / submitted by the customer. The issuance of this test report alone does not indicate any measure of approval, certification, supervision, COP, control of quality surveillance by ICAT of the test samples / items/ components. No extract, abridgment or abstraction from this test report may be published or used to advertise the product without the written consent of the Director, ICAT, who reserves the absolute right to agree or reject all or any of the details of any items of publicity for which consent may be sought. ICAT is in no way responsible for any misuse or copying of any design in connection with entire vehicle / components / systems and assemblies. Breach of any statutory provisions, of Indian laws or laws of other countries, will be sole responsibility of the customer. ICAT shall not be liable for any claims or damages made by the customer, whatsoever. The customer shall alone be liable for the same and undertakes to indemnify ICAT in this regard. Further, ICAT has the right to initiate cancellation / withdrawal of the certificate / report issued, in case of any fraud, misrepresentation, when it comes to the knowledge of ICAT. The appropriate local court at Gurgaon shall have the jurisdiction in respect of any dispute, claim or liability arising out of this report.

Prepared By	Checked By	Approved By
		
ABHISHEK MITTAL Asst. Manager	MADHUSUDAN JOSHI Dy. General Manager	PAMELA TIKKU Sr. General Manager

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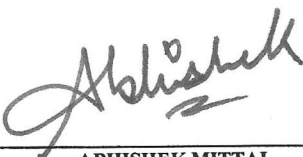

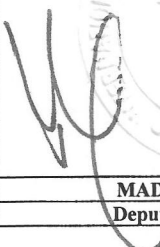
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7.0 TEST DETAILS, ACCEPTANCE CRITERIA & CONCLUSION:

Sr.No.	Test Title	Reference Standard	Functional Acceptance Criteria Specified by Standard	DUT Actual Region of Performance After Test
1.	Conductor Resistance Test	AIS:026 (Ver.3), AIS:028_(Ver.3)	Max. Specified Value of Conductor Resistance (at 20°C) > Observed Value of Conductor Resistance (at 20°C)	Satisfactory (for Results, refer Table1 in Annexure II)
2.	Spark Test		Should withstand 5000V A.C Voltage	Satisfactory Withstand specified test Voltage.
3.	Immersion Test		Should withstand 1000V A.C Voltage after 05hrs immersion in salt solution	Satisfactory Withstand specified test Voltage.
4.	Flammability Test		Burning Period after removal of Flame (tb) ≤ 60sec. and Unaffected portion (Uncharred) from lower edge of top clamp (Lu) ≥ 50 mm	Satisfactory (for results refer to Table 2 in Annexure-II)

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Annexure-I

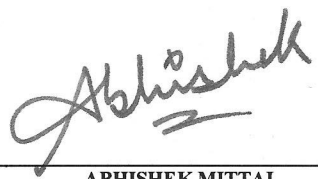


Sr. No.	Test	Test Procedure & Requirements	Test Results/Observations
1.	Conductor Resistance Test [as per Cl. No. 6.2 of JIS C3406:1993]	Procedure as per Sr. No. 6 of JIS C3005 Length of Sample (L) = 1000 mm	Satisfactory (for Results, refer Table1 below)

Table-1

Wire Colors	Observed No. of strands	Observed Stand Dia. (mm)	Max. Specified Value of Conductor Resistance (Ω/m) (at 20°C), as per; <input checked="" type="checkbox"/> Table 5 of ISO:6722:2006 <input type="checkbox"/> Table of JIS C3406 <input type="checkbox"/> Table of JASO D 608	Observed Value of Conductor Resistance (Ω/m)	
				R _t (Ω) at Test Room Temp. (25°C)	$R_{20} = \frac{R_t \times \alpha_t}{L}$ at 20°C (α _t = 0.973)
Black	30	0.248	0.0314	0.01295	0.0126
Blue	32	0.196	0.0314	0.01765	0.1717
Yellow	24	0.199	0.0471	0.02373	0.0230
Black, 0.35mm	12	0.189	0.0760	0.05006	0.0487
Purple	20	0.172	0.0615	0.03588	0.0349

α_t: Temperature Conversion Factor as per Table2 of JIS C3005

Sr.No.	Test	Test Procedure & Requirements	Test Results/Observations
2.	Spark Test [as per Cl. No. 6.3(1) of JIS C3406:1993]	<u>Procedure</u> = as per Sr. No. 8 of JIS C3005 <u>Length of Sample</u> = 1000 mm <u>Test Voltage</u> = 5000 V (A.C.) <u>Test Time (t)*</u> = 01 sec. * as per Table 1 of JIS C3406:1993, t ≥ 0.15 sec.	<u>The DUT(s) withstand the specified test voltage.</u> <u>Satisfactory.</u>
3.	Immersion Test [as per Cl. No. 6.3(2) of JIS C3406:1993]	<u>Length of Sample*</u> = 600 mm <u>Sample Preparation</u> = as per Cl. No. 6.3(2) of JIS C3406-1993 <u>Pre Immersion Time**</u> = 05hrs <u>Test Voltage</u> = 1000 V (A.C.) <u>Test Time (t)</u> = 01 min. * from the sample which passed Spark Test ** Time in 5% Salt Water.	<u>The DUT(s) withstand the specified test voltage.</u> <u>Satisfactory.</u>

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Annexure-I (continued)

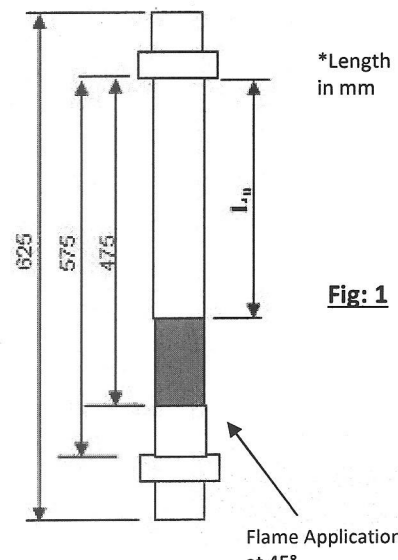
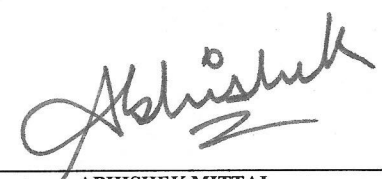

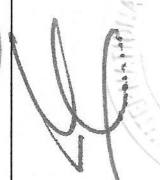
Sr.No.	Test	Test Procedure & Requirements	Test Results/Observations
4.	<p>Flammability Test</p> <p>[as per Clause No. 22 of IS 2465:1984]</p>	<p><u>Length of Samples</u> : 625mm <u>Source of Heat</u> : One Gas Burner (Conventional Bunsen Burner) - as per Fig.2 of IS:10810(Part 53)-1984 <u>Conditioning Temperature</u> : 60°C <u>Conditioning Time</u> : 04hrs <u>Burning Period after removal of Flame (tb)</u> ≤ 60 sec <u>Unaffected portion (Uncharred) from lower edge of top clamp (Lu)</u> ≥ 50mm (refer Fig.1 below)</p>	 <p>*Length in mm</p> <p>Fig: 1</p> <p>Flame Application at 45°</p> <p>Satisfactory (for results refer to Table 2)</p>

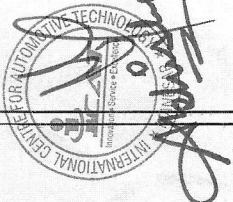
Table 2

Colour of Wire	Dia. of Wire (mm ²)	Mass of Wire (m) (gm)	Flame Application Time (T) (sec.) $T = 60 + \frac{m}{25}$	Test (Results / Observations)	
				tb (sec.)	Lu (mm)
Black	7.44	12.4708	60.29	0	108
Blue	6.272	9.1725	60.36	0	110
Yellow	4.776	6.0214	60.24	0	122
Black, 0.35mm	2.268	4.1844	60.16	0	106
Purple	3.44	5.0303	60.20	0	133

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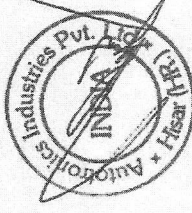
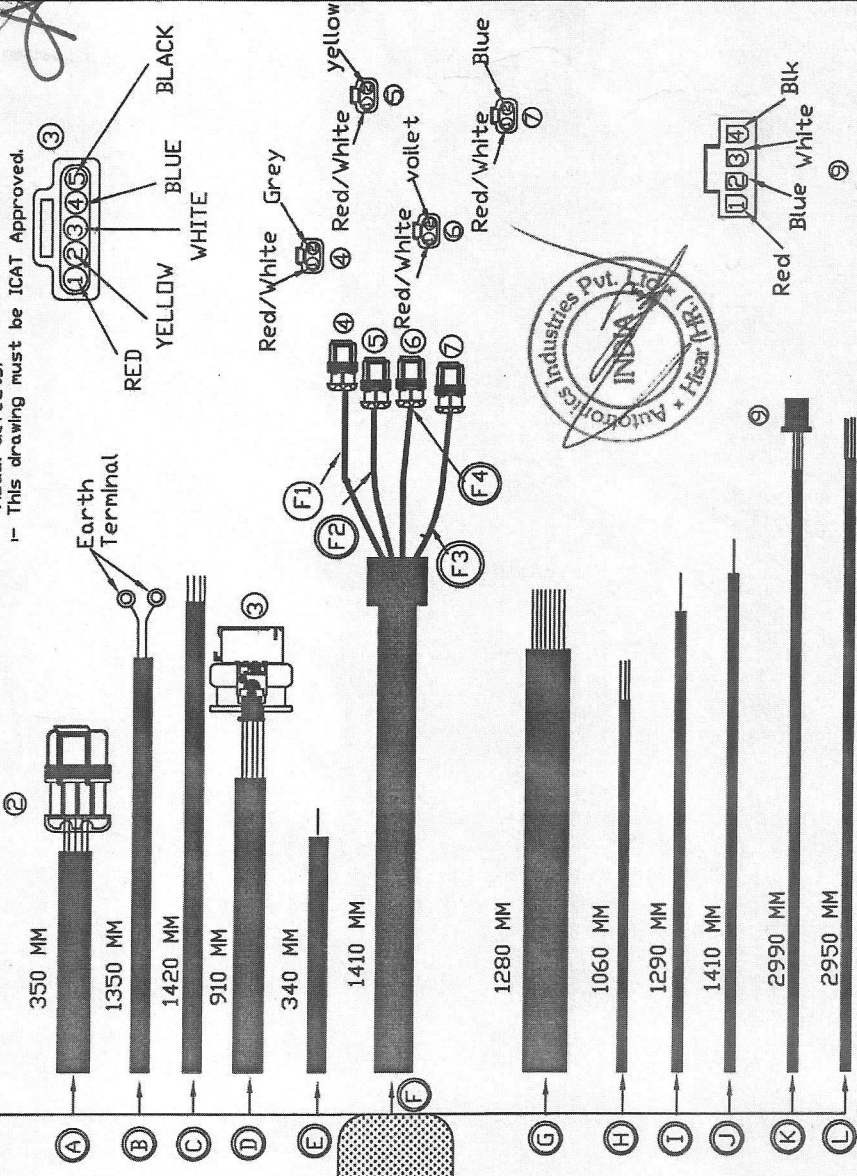
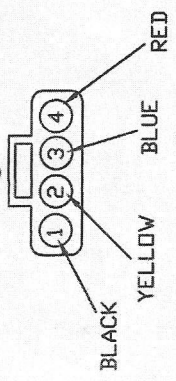
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TEST REPORT NO-CTO9NO108 DATED 02.04.2018

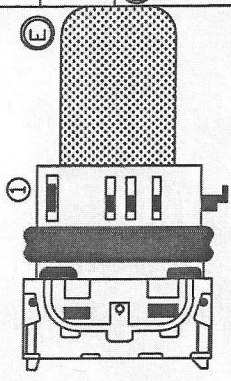


NOTE:-

- Cross section area of wire is 1.50 sqmm
- Cross section area of wire is 1.00 sqmm
- Cross section area of wire is 0.75 sqmm
- Cross section area of wire is 0.5 sqmm
- Cross section area of wire is 0.35 sqmm
- Part should be free from all types of Visual defects.
- This drawing must be ICAT Approved.



Branch	WIRE SIZE	Colour
A	0.35 SQMM	Black BLUE YELLOW RED
B	1.5 Sqmm	RED
	1.5 sqmm	Black
C	0.35 Sqmm	White
	0.35 Sqmm	White
	1.00 Sqmm	Black
	1.00 Sqmm	Blue
D	0.35 Sqmm	Red
	0.35 Sqmm	Yellow
	0.35 Sqmm	White
	0.35 Sqmm	Blue
E	0.35 Sqmm	Black
	0.35 Sqmm	Vollet



Branch	Wire Size	Colour
F1	0.75 Sqmm	Red/White
	0.75 Sqmm	grey
F2	0.75 Sqmm	Red/White
	0.75 Sqmm	yellow
F3	0.75 Sqmm	Red/White
	0.75 Sqmm	vollet
F4	0.75 Sqmm	Red/White
	0.75 Sqmm	blue
G	0.5 Sqmm	grey/bk Grey Blue blue/Bik vollet vollet/Bik Yellow/Bik yellow
H	0.35 Sqmm	Black
	0.35 Sqmm	Red
	0.35 Sqmm	White
I	0.50 Sqmm	Red/white

Branch	Wire	Size	Color
J	0.35	Sqmm	Brown
K	0.35	Sqmm	Red
	0.35	Sqmm	Blue
	0.35	Sqmm	White
	0.35	Sqmm	Black
L	0.35	Sqmm	yellow
	0.35	Sqmm	White
	0.50	Sqmm	Green
	0.50	Sqmm	Blue

TOLERANCE UNLESS OTHERWISE STATED	GENERAL NOTES-
METRIC * DEC. DIM =	ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED
MACHINING - CLEAN V ROUGH	ALL SHARP CORNERS TO BE REMOVED UNLESS OTHERWISE SPECIFIED.
VV FINE VVV GRIND	DO NOT SCALE, IF IN DOUBT ASK.

AUTOTRONICS INDUSTRIES PVT. LTD.			
916, SECTOR-16/17 HISAR-125005		DRG. No. - ACNG-02	
MODEL - Automotive Harness	TREATMENT -	SCALE - NTS	
Part Name - CNG Wire Kit	DATE 18.08.17	DRAWN SUNIL SHARMA	CHKD. DEEPAK AGRAWAL
PART No - Assembly 32 PIN			
FINAL- APPROVAL-			SHEET 1 OF 1

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