

केन्द्रीय पेट्रोसायन अभियांत्रिकी एवं  
प्रौद्योगिकी संस्थान (सिपेट)

(पूर्व में केन्द्रीय प्लास्टिक्स इंजीनियरिंग एवं तकनीकी संस्थान)  
मुख्यालय, पीडीआई सेल  
रसायन एवं पेट्रो रसायन विभाग  
रसायन एवं उर्वरक मंत्रालय, भारत सरकार  
टीवीके औद्योगिक इस्टेट, गिन्दी, चेन्नई - 600 032.  
दूरभाष : 044-29813708 (Direct) / 044-22254780 (Extn-502)  
ई-मेल : pdiho@cipet.gov.in



CENTRAL INSTITUTE OF PETROCHEMICALS  
ENGINEERING & TECHNOLOGY

(Formerly Central Institute of Plastics Engineering & Technology)  
Head Office, PDI Cell  
Department of Chemicals & Petrochemicals  
Ministry of Chemicals & Fertilizers, Govt. of India  
TVK Industrial Estate, Guindy, Chennai - 600 032.  
Phone : 044-29813708 (Direct) / 044-22254780 (Extn.-502)  
Email : pdiho@cipet.gov.in

CIPET/QF/7741

Name of Inspecting Official: Nagarajan T  
Code No. : 819

W.O. Centre: Kochi  
Camp at : M/s.Floflex Industries LLP, Erode

INSPECTION REPORT

1.	Report No : IB00423240500236	Date: 28.04.2023
2.	Name of the Indenter / Consignee with detailed address	The Office of the Executive Engineer, Kerala Water Authority, P.H.Division, Irinjalakuda-680121
3.	Indenter Order No. & Date and Extension (if any)	No.D4/2236/2022 Dated: 17/04/2023 Work Order No. KWA/PHC/TSR/D5/4877/2022 dt.11/01/2023
4.	Details of the Consignee	The Office of the Executive Engineer, Kerala Water Authority, P.H.Division, Irinjalakuda-680121 JJM - Parappukkara Grama Panchayath Phase-II-Pipe line extension and providing FHTCs to various of parappukkara Grama Panchayath - Thirty Party Inspection of HDPE pipe
5.	Name of the Supplier / Contractor	Sri.M.Viswanathan, Fathima Building, IInd floor, Eloor Road, N.Kalamassery, Kochi-683104
6.	Supplier Order No. & Date (if any)	Ref:Order No PE-01/T88/MVV/FILLP/23 Dated: 14/04/2023
7.	Name and address of the Manufacturer / Inspection site	M/s.Floflex Industries LLP, Plot No-Kk3 and Kk4, Sipcot Industrial Growth Centre, P.V.Palayam P.O, Perundurai Taluk, Erode Dist 638052, Tamilnadu
8.	Manufacturer / Supplier Inspection Call Letter No. & Date	FF/CIPET/VCL/APRIL-23/008 ( R ) dated 26.04.2023
9.	PDI Cell Assignment No. & Date	CIPET/HO/2023240498 dated 24.04.2023
10.	Date of inspection	Initiated on: 28.04.2023 Completed on: 28.04.2023
11.	Any other information	Manufacturer BIS License No. CML- 6500035611 Brand Name: Floflex Industries LLP

DETAILS OF THE STORES

Sl No.	Description of the Items	Quantity as per supplier order in meter	Quantity Inspected earlier (Cumulative) in meter	Quantity offered for inspection in meter	Quantity Accepted in meter	Quantity Rejected in meter	Quantity Balance in meter
HDPE Pipes as per IS 4984: 2016 with IS Certification Mark							
01	90MM PE 100 PN 8 SDR 17	62500	Nil	20000 (200nos X 100 meter Coil)	20000 (200nos X 100 meter Coil)	Nil	42500
02	110MM PE 100 PN 8 SDR 17	7435	Nil	2600 (26nos X 100 meter Coil)	2600 (26nos X 100 meter Coil)	Nil	4835
03	140MM PE 100 PN 8 SDR 17	283	Nil	283 (23nos X12 meter Length) , (1no X 7meter Length)	283 (23nos X12 meter Length) , (1no X 7meter Length)	Nil	Nil
04	160MM PE 100 PN 8 SDR 17	11120	Nil	3708 (297nos X12 meter Length) , (24nos X 6meter Length)	3708 (297nos X12 meter Length) , (24nos X 6meter Length)	Nil	7412

Remarks: All accepted items are stamped thus-



CIPET/PDI/2023-24  
MDU/009/ 819

1. Certified that the items as detailed above have been inspected and accepted. The accepted items may be dispatched to the consignee. The Inspection Document Nos Ref.No. IB00423240500236/1 to 4 dated 28.04.2023 are enclosed.  
2. This inspection report is valid for 30 days and any Dispute/discrepancies/claims may be brought to the notice of the undersigned within 30 days from the date of issue of this report.

AUTHORIZED SIGNATORY  
(Nagarajan T & 819)

CC: 1. M / s Floflex Industries LLP - Perundurai, Erode 2. Sri.M.Viswanathan, Contractor 3. EE, KWA 4. CIPET - Kochi



कन्द्रीय पेट्रो रसायन अभियांत्रिकी एवं  
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आजादी का  
अमृत महोत्सव

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Code No. : 819

W.O. Centre: Kochi

Camp at : M/s.Floflex Industries LLP,Erode

**INSPECTION DOCUMENTS**

Inspection Document NO.: IB00423240500236/ 1

Dated: 28.04.2023

Issued to: The Office of the Executive Engineer, Kerala Water Authority, P.H.Division, Irinjalkuda-680121  
Manufacturer / Supplier Inspection Call Letter No. & Date: FF/CIPET/ICL/APRIL-23/008 ( R ) dated 26.04.2023  
Test report as per IS 4984:2016 (Latest Amendment)

**PART - A: PARTICULARS OF STORES**

- a) Description of the items : HDPE Pipe  
Grade/Variety/Type/Size/Class etc. : PE 100 PN8 90MM SDR 17  
b) Declared Value, if any : Nil  
c) Quantity : 20000 Meters ( 200 nos X 100 mtrs coil )  
d) Item omitted from the original scope of work if any : Nil  
e) Any Other Information : Batch Numbers : 202304150021

**PART B: SUPPLEMENTARY INFORMATION**

- a) Reference to sampling procedure : As per IS:4984 -2016 with latest amendment (Random Sampling)

**PART C: RESULTS OF WITNESSED TESTS & REVIEW OF DOCUMENTS**

Sl. No.	Clause No.	Tests Witnessed	Unit	Specified Requirements	Observed Results
1	6.2	Colour of pipe	---	Black	Black
2	6.2.1	Dimension of Blue Stripes			
		Width	mm	Min. 3.0	3.1
		Depth	mm	Max. 0.2	0.19
3	7.1	Visual Appearance	---	The internal & External surfaces shall be smooth, clean and free from grooving and other defects. Ends shall be cleanly cut and shall be square with the axis of the pipe	Satisfactory
		Out of Squareness	mm	Max. 3	2.0
4	7.2	Length of straight pipe	Mtrs	--	Not Applicable
	7.4	Dimensions of Pipe			
	7.4.1.1 Table-3	Outside Diameter			
		Minimum	mm	90.0	90.0
	7.4.1.1 Table-4	Maximum	mm	90.6	90.6
		Wall Thickness			
7.4.1.2	Minimum	mm	5.3	5.35	
	Maximum	mm	8.0	5.79	
5	8	Performance Requirement			
	8.1.1 Table-5	Hydraulic Characteristic (IPCR) Acceptance Test 48 hrs at 80°C @ 5.7 MPa Induced Stress	---	The sample shall show no signs of localized swelling, leakage or weeping and shall not burst during the Test Duration	No Sign of Failure Observed during test duration.
	8.2	Longitudinal Reversion Test	%	Max ± 3 %	1.4
	8.3	Carbon Black Content	%	2.5 ± 0.5	2.52
		Carbon Black Dispersion	---	Satisfactory	Satisfactory
	8.4	Melt Flow Rate (190°C/5kgf)	g/10min	0.15 to 1.1	0.254
	8.5	Oxidation Induction Time	minutes	≥ 20.0	22.84
8.7	Base Density at 27°C	kg/m <sup>3</sup>	940 to 960	951.9	
8.9	Elongation at Break	%	≥ 350	539.32	
6	10	Marking on Pipe	---	MFR BY FLOFLEX INDUSTRIES LLP, PE100 DN80 PN8 SDR17, 2023XXXXXXX IS 4984 C/M/L 6500035811	Marking are as per Standard

**Review of Documents (if any)**

Sl. No.	Clause No.	Tests Parameters/ Documents	Certificate/ Report No. & Date	Report issued by	Review Remarks
1	5.2, 6.1.1 Table 2	Raw material property Grade: 002DP48 HDPE D PIPES	BATCH NO : HD23020127 Dated : 09/02/2023	IOCL	Reviewed & Confirmed
		Raw material Property	BATCH NO : 5109 DATED : 18/04/2022	konspec	Reviewed & Confirmed
2	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: 03794 , Dated : 30-08-2022	CIPET - MADURAI	Reviewed & Confirmed
3	do	Internal Pressure Creep Rupture Test of Pipe (at 60°C for 165 h)			
4	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 1000 h)			
5	8.6	Overall Migration			
6	8.1.2	Internal Pressure Creep Rupture Test of Joint Pipe (at 60° C for 48 h)			
7	8.8	Tensile Strength for Butt-fusion			
8	8.10	Slow Crack Growth Rate Test			

**PART - D: REMARKS**

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- These witness result stated above relate Exclusive to the work order of the object(s) or the lot inspection.
- Lab. Environmental Condition during the witness or Tests: Temperature 27± 2 °C & R.H. 85±5%
- Calibration Status of equipments/instruments are verified.

*[Signature]*

**AUTHORIZED SIGNATORY  
(Nagarajan T & 819)**



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CIPET/QF/7742

Name of Inspecting Official: Nagarajan T

Code No. : 819

W.O. Centre: Kochi

Camp at : M/s.Floflex Industries LLP,Erode

INSPECTION DOCUMENTS

Inspection Document NO.: IB00423240500236/ 2

Dated: 28.04.2023

Issued to: The Office of the Executive Engineer, Kerala Water Authority, P.H.Division, Irinjalkuda-680121

Manufacturer / Supplier Inspection Cell Letter No. & Date: FF/CIPET/II/CL/APRIL-23/008 ( R ) dated 26.04.2023

Test report as per IS 4984:2016 (Latest Amendment)

PART - A: PARTICULARS OF STORES

- f) Description of the Items : HDPE Pipe  
Grade/Variety/Type/Size/Class etc. : PE 100 PN8 110MM SDR 17
- g) Declared Value, if any : Nil
- h) Quantity : 2600 Meters ( 26 nos X 100 mtrs coil )
- i) Item omitted from the original scope of work if any : Nil
- j) Any Other Information : Batch Numbers : 2023D4150011

PART B: SUPPLEMENTARY INFORMATION

- b) Reference to sampling procedure : As per IS:4984 -2016 with latest amendment (Random Sampling)

PART C: RESULTS OF WITNESSED TESTS & REVIEW OF DOCUMENTS

Sl. No.	Clause No.	Tests Witnessed	Unit	Specified Requirements	Observed Results	
1	6.2	Colour of pipe	---	Black	Black	
2	6.2.1	Dimension of Blue Stripes				
		Width	mm	Min. 3.0	4.0	
		Depth	mm	Max. 0.2	0.16	
3	7.1	Visual Appearance	---	The Internal & External surfaces shall be smooth, clean and free from grooving and other defects. Ends shall be clearly cut and shall be square with the axis of the pipe	Satisfactory	
		Out of Squareness	mm	Max. 3	2.5	
		7.2	Length of straight pipe	Mtrs	---	Not Applicable
4	7.4	Dimensions of Pipe				
		7.4.1.1 Table-3	Outside Diameter			
			Minimum	mm	110.0	110.1
	Maximum	mm	110.7	110.5		
	7.4.1.1 Table-4	Wall Thickness				
		Minimum	mm	8.5	8.71	
Maximum	mm	7.3	7.20			
7.4.1.2	Ovality	mm	Max.2.2	1.8		
5	8	Performance Requirement				
	8.1.1 Table-5	Hydraulic Characteristic (IPCR) Acceptance Test 48 hrs at 80°C @ 5.7 MPa Induced Stress	---	The sample shall show no signs of localized swelling, leakage or weeping and shall not burst during the Test Duration	No Sign of Failure Observed during test duration.	
	8.2	Longitudinal Reversion Test	%	Max ± 3 %	1.2	
	8.3	Carbon Black Content	%	2.5 ± 0.5	2.39	
		Carbon Black Dispersion	---	Satisfactory	Satisfactory	
	8.4	Melt Flow Rate (190°C/5kgf)	g/10min	0.15 to 1.1	0.253	
	8.5	Oxidation Induction Time	minutes	≥ 20.0	28.92	
	8.7	Base Density at 27°C	kg/m <sup>3</sup>	940 to 980	952.02	
8.9	Elongation at Break	%	≥ 350	419.84		
6	10	Marking on Pipe	---	MFR BY FLOFLEX INDUSTRIES LLP, PE100 DN110 PN8 SDR17, 2023XXXXXXX IS 4984 CML-6500035811	Marking as per Standard	

Review of Documents (if any)

Sl. No.	Clause No.	Tests Parameters/ Documents	Certificate Report No. & Date	Report issued by	Review/ Remarks
1.	5.2, 6.1.1 Table 2	Raw material property	BATCH NO : HD23020127 Dated : 09/02/2023	IOCL	Reviewed & Confirmed
		Raw material Property	BATCH NO : 5109 DATED : 18/04/2022	konspec	Reviewed & Confirmed
2.	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: 03794, Dated : 30-05-2022	CIPET - MADURAI	Reviewed & Confirmed
3.	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 165 h)			
4.	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 1000 h)			
5.	8.8	Overall Migration			
6.	8.1.2	Internal Pressure Creep Rupture Test of Joint Pipe (at 80°C for 48 h)			
7.	8.8	Tensile Strength for Butt-fusion			
8.	8.10	Slow Crack Growth Rate Test			

PART - D: REMARKS

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- Lab. Environmental Condition during the witness or Tests: Temperature 27± 2 °C & R.H. 65±5%
- Calibration Status of equipments/instruments are verified.

*(Signature)*  
AUTHORIZED SIGNATORY  
(Nagarajan T & 819)



**केन्द्रीय पेट्रोसायन अभियांत्रिकी एवं प्रौद्योगिकी संस्थान (सिपेट)**

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W.O. Centre:Kochi

Camp at : M/s.Floflex Industries LLP,Erode

**INSPECTION DOCUMENTS**

Inspection Document NO. : IB00423240500236/ 3

Dated: 28.04.2023

Issued to : The Office of the Executive Engineer, Kerala Water Authority, P.H.Division, Irinjalakuda-680121

Manufacturer / Supplier Inspection Call Letter No. & Date : FF/CIPET/CL/APRIL-23/008 ( R ) dated 26.04.2023

Test report as per IS 4984:2018 (Latest Amendment)

**PART - A: PARTICULARS OF STORES**

- k) Description of the items : HDPE Pipe  
Grade/Variety/Type/Size/Class etc. : PE 100 PNB 140MM SDR 17  
l) Declared Value, if any : Nil  
m) Quantity : 283 Meters ( 23 nos X, 12 meter Length ) , (1no X 7 meter Length )  
n) Item omitted from the original scope of work if any : Nil  
o) Any Other Information : Batch Numbers : 202304170031

**PART B: SUPPLEMENTARY INFORMATION**

- c) Reference to sampling procedure : As per IS:4984 -2018 with latest amendment (Random Sampling)

**PART C: RESULTS OF WITNESSED TESTS & REVIEW OF DOCUMENTS**

Sl. No.	Clause No.	Tests Witnessed	Unit	Specified Requirements	Observed Results
1	6.2	Colour of pipe	---	Black	Black
2	6.2.1	Dimension of Blue Stripes	---	---	---
		Width	mm	Min. 3.0	4.9
		Depth	mm	Max. 0.2	0.10
3	7.1	Visual Appearance	---	The internal & External surfaces shall be smooth, clean and free from grooving and other defects. Ends shall be cleanly cut and shall be square with the axis of the pipe	Satisfactory
		Out of Squareness	mm	Max. 4.0	1.5
4	7.2	Length of straight pipe	Mtrs	---	Not Applicable
	7.4	Dimensions of Pipe	---	---	---
	7.4.1.1 Table-3	Outside Diameter	---	---	---
		Minimum	mm	140.0	140.1
	7.4.1.1 Table-4	Maximum	mm	140.9	140.7
		Wall Thickness	---	---	---
7.4.1.2	Minimum	mm	8.3	8.41	
	Maximum	mm	9.3	9.10	
5	8	Ovality	mm	Max 2.8	1.1
		Performance Requirement	---	---	---
	8.1.1 Table-5	Hydraulic Characteristic (HCR) Acceptance Test 48 hrs at 80°C @ 5.7 MPa Induced Stress	---	The sample shall show no signs of localized swelling, leakage or weeping and shall not burst during the Test Duration	No Sign of Failure Observed during test duration.
	8.2	Longitudinal Reversion Test	%	Max ± 3 %	1.2
	8.3	Carbon Black Content	%	2.5 ± 0.5	2.29
		Carbon Black Dispersion	---	Satisfactory	Satisfactory
	8.4	Melt Flow Rate (190°C/5kgf)	g/10min	0.15 to 1.1	0.288
	8.5	Oxidation Induction Time	minutes	≥ 20.0	24.92
	8.7	Base Density at 27°C	kg/m <sup>3</sup>	940 to 960	945.90
8.9	Elongation at Break	%	≥ 350	537.72	
6	10	Marking on Pipe	---	MFR BY FLOFLEX INDUSTRIES LLP, PE100 PNB DN140 SDR17, 2023XXXXXXX IS 4984 CML 650035611	Marking are as per Standard

**Review of Documents (if any)**

Sl. No.	Clause No.	Tests Parameters/ Documents	Certificate/ Report No. & Date	Report issued by	Review Remarks
1.	5.2, 6.1.1 Table - 2	Raw material property Grade: 002DP48 HDPE D PIPES	BATCH NO : HD23020127 Dated : 09/02/2023	IOCL	Reviewed & Confirmed
		Raw material Property	BATCH NO : 5109 DATED : 19/04/2022	konspec	Reviewed & Confirmed
2.	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: 03794 , Dated : 30-06-2022	CIPET - MADURAI	Reviewed & Confirmed
3.	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 185 h)			
4.	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 1000 h)			
5.	8.6	Overall Migration			
6.	8.1.2	Internal Pressure Creep Rupture Test of Joint Pipe (at 80° C for 48 h)			
7.	8.8	Tensile Strength for Butt-fusion			
8.	8.10	Slow Crack Growth Rate Test			

**PART - D: REMARKS**

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- Calibration Status of equipments/Instruments are verified.

*(Handwritten signature)*

**AUTHORIZED SIGNATORY  
(Nagarajan T & 819)**



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INSPECTION DOCUMENTS

Inspection Document NO : IB00423240500236/ 4

Dated: 28.04.2023

Issued to : The Office of the Executive Engineer, Kerala Water Authority, P.H.Division, Irinjalakuda-690121

Manufacturer / Supplier Inspection Call Letter No. & Date : FF/CIPET/CL/APRIL-23/008 ( R ) dated 26.04.2023

Test report as per IS 4984:2018 (Latest Amendment)

PART - A: PARTICULARS OF STORES

p)	Description of the items	HDPE Pipe
	Grade/Variety/Type/Size/Class etc	PE 100 PN8 160MM SDR 17
q)	Declared Value, if any	Nil
r)	Quantity	3708 Meters ( 287 Nos X 12 Meter Length ) , ( 24nos X 6 meter Length)
s)	Item omitted from the original scope of work if any	Nil
t)	Any Other Information : Batch Numbers	202304140031

PART B: SUPPLEMENTARY INFORMATION

d) Reference to sampling procedure : As per IS:4984 - 2018 with latest amendment (Random Sampling)

PART C: RESULTS OF WITNESSED TESTS & REVIEW OF DOCUMENTS

Sl. No.	Clause No.	Tests Witnessed	Unit	Specified Requirements	Observed Results
1	6.2	Colour of pipe	---	Black	Black
2	6.2.1	Dimension of Blue Stripes			
		Width	mm	Min. 3.0	6.3
		Depth	mm	Max. 0.5	0.20
3	7.1	Visual Appearance	---	The internal & external surfaces shall be smooth, clean and free from grooving and other defects. Ends shall be cleanly cut and shall be square with the axis of the pipe	Satisfactory
		Out of Squareness	mm	Max. 4.0	1.5
	7.2	Length of straight pipe	Mtrs	--	Not Applicable
4	7.4	Dimensions of Pipe			
			Outside Diameter		
	7.4.1.1 Table-3	Minimum	mm	160.0	160.1
		Maximum	mm	161.0	160.9
	7.4.1.1 Table-4	Wall Thickness			
		Minimum	mm	9.5	9.67
	Maximum	mm	10.6	10.41	
	7.4.1.2	Ovality	mm	Max.3.2	1.5
5	8	Performance Requirement			
	8.1.1 Table-5	Hydraulic Characteristic (IPCR) Acceptance Test 48 hrs at 80°C @ 5.7 MPa Induced Stress	---	The sample shall show no signs of localized swelling, leakage or weeping and shall not burst during the Test Duration	No Sign of Failure Observed during test duration.
		8.2	Longitudinal Reversion Test	%	Max ± 3 %
	8.3	Carbon Black Content	%	2.5 ± 0.5	2.22
		Carbon Black Dispersion	---	Satisfactory	Satisfactory
	8.4	Melt Flow Rate (190°C/5kgf)	g/10min	0.15 to 1.1	0.231
	8.5	Oxidation Induction Time	minutes	≥ 20.0	23.20
	8.7	Base Density at 27°C	kg/m <sup>3</sup>	940 to 960	952.49
8.9	Elongation at Break	%	≥ 350	725.80	
6	10	Marking on Pipe	---	MFR BY FLOFLEX INDUSTRIES LLP, PE100 PN8 DN160 SDR17, 2023XXXXXXXX IS 4984 CML 650035611	Marking are as per Standard

Review of Documents (if any)

Sl. No.	Clause No.	Tests Parameters/ Documents	Certificate/ Report No. & Date	Report issued by	Review/ Remarks
1.	6.2, 6.1.1 Table 2	Raw material property Grade: 002DP48 HDPE D PIPES	BATCH NO : HD23020127 Dated : 09/02/2023	iOCL	Reviewed & Confirmed
		Raw material Property	BATCH NO : 5109 DATED : 16/04/2022	konspec	Reviewed & Confirmed
2.	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: 03794, Dated : 30-05-2022	CIPET - MADURAI	Reviewed & Confirmed
3.	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 165 h)			
4.	do	Internal Pressure Creep Rupture Test of Pipe (at 80°C for 1000 h)			
5.	8.6	Overall Migration			
6.	8.1.2	Internal Pressure Creep Rupture Test of Joint Pipe (at 80°C for 48 h)			
7.	8.8	Tensile Strength for Butt-fusion			
8.	8.10	Slow Crack Growth Rate Test			

PART - D: REMARKS

- This inspection document shall not be reproduced except in full without the written approval of the PDI Cell at CIPET Head Office.
- These witness result stated above relate Exclusive to the work order of the object(s) or the lot inspection.
- Lab. Environmental Condition during the witness or Tests: Temperature 27± 2 °C & R.H. 65±5%
- Calibration Status of equipments/Instruments are verified.

*(Signature)*

AUTHORIZED SIGNATORY  
(Nagarajan T & 819)