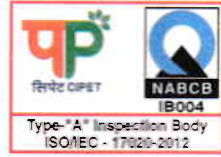


केन्द्रीय पेट्रोसायन अभियांत्रिकी एवं प्रौद्योगिकी संस्थान (सिपेट)

(पूर्व में केन्द्रीय प्लास्टिक्स इंजीनियरिंग एवं तकनीकी संस्थान)
मुख्यालय, पीडीआई सेल
रसायन एवं पेट्रो रसायन विभाग
रसायन एवं उर्वरक मंत्रालय, भारत सरकार
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ई-मेल : pdiho@cipet.gov.in



CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY(CIPET)
(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.
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CIPET/QF/7742

Name of Inspecting Official: M Balasubramanian
Code No. : 267

W.O.Centre:Kochi

Camp. at : M/s. A N D Valves and Castings India Pvt Ltd

INSPECTION REPORT

1.	Report No: IB00423240502493	Date: 08.11.2023
2.	Name of the Indenter / Consignee with detailed address	The Executive Engineer, KERALA WATER AUTHORITY, P.H.DIVISION, Irinjalakuda, Kerala.
3.	Indenter Order No & Date and Extension (if any)	KWA/PHC/TSR/D5/4877/2022 dt.11.01.2023
4.	Details of the Consignee	The Executive Engineer, KERALA WATER AUTHORITY, P.H.DIVISION, Irinjalakuda, Kerala. Nature of work : Jal Jeevan Mission Parappukkara Grama Panchayath-Phase II pipe line extension and FHTCs at various places of Parappukkara Grama Panchayath.
5.	Name of the Supplier / Contractor	Sri. M.V Viswanathan, N.Kalamassery, Kochi-683104.
6.	Supplier Order No. & Date (if any)	---
7.	Name and address of the Manufacturer / Inspection site	M/s.A N D Valves and Castings India Private Limited, 12 th Km, Palakad Main road, Madukkarai, Coimbatore-641105
8.	Manufacturer / Supplier Inspection Call Letter No. & Date	AND/010/CIPET/23-24 dated 04.11.2023
9.	PDI Cell Assignment No. & Date	CIPET/HO/ 2023245847 dated : 06.11.2023
10.	Date of inspection	Initiated on: 06.11.2023 Completed on: 08.11.2023
11.	Any other information	Manufacturer BIS License No. CM/L- 6500061705 Brand name : Mercury

DETAILS OF THE STORES

Sl. No.	Description of the items	Quantity as per supplier order in meters	Quantity Inspected earlier (Cumulative) in meters	Quantity offered for inspection in meters	Quantity Accepted in meter	Quantity Rejected in meter	Quantity Balance In meter
HDPE Pipes as per IS 4984: 2016 with IS Certification Mark							
1	90mm dia PE 100 PN8 HDPE PIPES SDR 17	42549	Nil	10000 (50 nos X 200 meter)	10000 (50 nos X 200 meter)	Nil	Nil
2	110mm dia PE 100 PN8 HDPE PIPES SDR 17	5234	Nil	5324 (34 nos X 150 meter + 1 no x 134 meter)	5324 (34 nos X 150 meter + 1 no x 134 meter)	Nil	Nil
3	160mm dia PE 100 PN8 HDPE PIPES SDR 17	7411	Nil	7411 (823 nos X 9 meter + 1 no X 3 meter)	7411 (823 nos X 9 meter + 1 no X 3 meter)	Nil	Nil



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. IB00423240502493/1-3 dated 08/11/2023 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.

(Signature)
08/11/23
AUTHORIZED SIGNATORY
(M Balasubramanian & 267)

CC: 1. M/s A N D Valves and Castings India Pvt Ltd 2. Sri MV.Viswanathan -Contractor 3. SE, KWA 4. CIPET - Kochi

केंद्रीय पेट्रोसायन अभियांत्रिकी एवं
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CIPET/QF/7742

Name of Inspecting Official: M Balasubramanian
 Code No. : 627

W.O.Centre: Kochi

Camp. at : M/s. A N D Valves and Castings India Pvt Ltd

INSPECTION DOCUMENTS

Inspection Document NO.: IB00423240502493/1

Dated: 08.11.2023

Issued to M/s. The Executive Engineer, KERALA WATER AUTHORITY, P.D. DIVISION, Immalaruda Kerala.

Manufacturer / Supplier Inspection Call Letter No. & Date: AND/010/CIPET/23-24 dated 04.11.2023

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

PART - A: PARTICULARS OF STORES

a) Description of the items	: HDPE Pipe
b) Grade/Variety/Type/Size/Class etc.	: 90mm PE 100 PN 8 SDR 17
c) Declared Value, if any	: Nil
d) Quantity	: 10000(50 nos X 200 meter)
e) Item omitted from the original scope of work if any	: Nil
f) Any Other Information : Batch Numbers	: 20231001001A, 20231001001B

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	3.17
3	---	Depth	mm	Max. 0.2	0.18
		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
4	7.2	Out of Squareness	mm	Max. 3.0	2.81
	7.4	Length of straight pipe	Mtrs	--	Not Applicable
	7.4.1.1 Table-3	Dimensions of Pipe			
		Outside Diameter			
	7.4.1.1 Table-4	Minimum	mm	90.0	90.17
		Maximum	mm	90.6	90.51
7.4.1.2	Wall Thickness	mm			
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 %	1.7
	8.3	Carbon Black Content	%	2.5 ± 0.5	2.11
		Carbon Black Dispersion	---	Satisfactory	Satisfactory
	8.4	Melt Flow Rate (190°C/5kgf)	g/10min	0.20 to 1.10	0.243
	8.5	Oxidation Induction Time	minutes	≥ 20.0	Enclosed
	8.7	Base Density at 27°C	kg/m ³	930 to 960	951.3
	8.9	Elongation at Break	%	≥ 350	423.67
6	10	Marking on Pipe	---	MERCURY HDPE PIPE PE100 PN8 SDR17 DN90 IS 4984 2016 CML/ 6500061705	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: Sabic P6006AD	Batch no. 25040036 dt 28.09.2022	Sabic	Reviewed & Confirmed
2.	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: PTL/GEN/04117, Dated : 03.08.2022	M/s Pioneer Testing Laboratory .New Delhi	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.	8.10	Slow Crack Growth Rate Test	Test report on Date 12.04.2023	CIPET- Madurai	Reviewed & Confirmed
8.	8.5	Oxidation Induction Time			

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. 65±5%.
- Calibration Status of equipment's/Instruments are verified.

(Signature)
 08/11/23
**AUTHORIZED SIGNATORY
 (M Balasubramanian & 267)**

**द्रीय पेट्रोसायन अभियांत्रिकी एवं
 आद्योगिकी संस्थान (सिपेट)**
 (पूर्व में केन्द्रीय प्लास्टिक इंजीनियरिंग एवं तकनीकी संस्थान)
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CIPET/QF/7742

Name of Inspecting Official: M Balasubramanian
 Code No. : 267

W.O.Centre:Kochi
 Camp. at : M/s. A N D Valves and Castings India Pvt Ltd

INSPECTION DOCUMENTS

Inspection Document NO : IB00423240502493/2

Dated: 08.11.2023

Issued to :M/s. The Executive Engineer, KERALA WATER AUTHORITY PH DIVISION Ininjalakuda, Kerala.

Manufacturer / Supplier Inspection Call Letter No. & Date: AND/010/CIPET/23-24 dated 04.11.2023

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

PART - A: PARTICULARS OF STORES

- | | |
|--|--|
| a) Description of the items | : HDPE Pipe |
| b) Grade/Variety/Type/Size/Class etc. | : 110mm PE100 PN 8 SDR 17 |
| c) Declared Value, if any | : Nil |
| d) Quantity | : 5234 (34 nos X 150 meter + 1 no X 134 meter) |
| e) Item omitted from the original scope of work if any | : Nil |
| f) Any Other Information : Batch Numbers | : 20231003001A. |

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	Color of pipe	---	Black	Black
2	6.2.1	Width of Blue Stripes	mm	Min. 3.0	3.42
			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
	7.2	Flatness	mm	Max. 3.0	2.76
4	7.4	Length of straight pipe	Mtrs	--	Not Applicable
	7.4.1.1 Table-3	Outside Diameter	mm	110.0	110.01
			mm	110.7	110.28
	7.4.1.1 Table-4	Wall Thickness	mm	6.5	6.51
			mm	7.3	7.19
7.4.1.2	Wall Thickness	mm	Max.2.2	1.58	
5	8	Performance Requirement	---	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.
	8.1.1 Table-5	Flare Characteristic (IPCR) Flare Test 48 hrs at 80°C	---		
	8.2	Longitudinal Reversion Test	%	Max ± 3%	1.3
	8.3	Carbon Black Content	%	2.5 ± 0.5	2.66
	8.4	Carbon Black Dispersion	---	Satisfactory	Satisfactory
	8.5	Flow Rate (190°C/5kgf)	g/10min	0.20 to 1.10	0.247
8.7	Flame Induction Time	minutes	≥ 20.0	Enclosed	
8.9	Density at 27°C	kg/m ³	930 to 960	949.0	
6	10	Marking on Pipe	---	MERCURY HDPE PIPE PE100 PN8 SDR17 DN110 IS 4984:2016 CM/L 6500061705	Marking are as per Standard

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: Sabic P6006AD	Batch no. 25040036 dt 28.09.2022	Sabic	Reviewed & Confirmed
2.	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: PTL/GEN/04117, Dated : 03.08.2022	M/s Pioneer Testing Laboratory, New Delhi	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	External Infiltration			
6.	8.1.2	Internal Pressure Creep Rupture Test of Joint Pipe (at 80°C for 48 h)			
7.	8.10	Low Crack Growth Rate Test	Sample submitted for Test report on Date 12.04.2023	CIPET-Madurai	Reviewed & Confirmed
8.	8.5	Oxidation Induction Time			

PART - D: REMARKS

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- These witness results are related above relate Exclusive to the work order of the object(s) or the lot inspection.
- Lab. Environmental conditions during the witness or Tests: Temperature 27± 2 °C & R.H. 65±5%.
- Calibration Status of all instruments are verified.

(Signature)
 08/11/23
**AUTHORIZED SIGNATORY
 (M Balasubramanian & 267)**

द्रीय पेट्रोसायन अभियांत्रिकी एवं
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Ministry of Chemicals & Fertilizers, Govt. of India

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Email : pdiho@cipet.gov.in

CIPET/QF/7742

Name of Inspecting Official: M Balasubramanian
Code No. : 267

Camp. at : M/s. A N D Valves and Castings India Pvt Ltd
W.O.Centre:Kochi

Dated: 08.11.2023

Inspection Document NO.: IB00423240502493/3
Issued to: M/s. The Executive Engineer, KERALA WATER AUTHORITY, P.H.DIVISION, Injalakuda, Kerala.
Manufacturer / Supplier Inspection Call Letter No. & Date: AND/010/CIPET/23-24 dated 04.11.2023
Test report as per IS 4984:2016 (Latest Amendment)

PART - A: PARTICULARS OF STORES

a) Description of the items	: HDPE Pipe
b) Grade/Variety/Type/Size/Class etc.	: 160mm PE100 PN 8 SDR 17
c) Declared Value, if any	: Nil
d) Quantity	: 7411 (823 nos X 9 meter + 1 no X 3 meter)
e) Item omitted from the original scope of work if any	: Nil
f) Any Other Information : Batch Numbers	: 20231001002A.

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			Black	
		Width	mm	Min. 3.0	3.16	
		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. 4.0	3.89	
	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	160.21	
		Maximum	mm	161.0	160.65	
	7.4.1.1 Table-4	Wall Thickness				
		Minimum	mm	9.5	9.61	
	Maximum	mm	10.6	9.97		
	7.4.1.2	Ovality	mm	Max 3.2	1.63	
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	2.34
			Carbon Black Dispersion	---	Satisfactory	Satisfactory
		8.4	Melt Flow Rate (190°C/5kgf)	g/10min	0.20 to 1.10	0.254
		8.5	Oxidation Induction Time	minutes	≥ 20.0	Enclosed
8.7	Base Density at 27°C	kg/m ³	930 to 960	952.1		
8.9	Elongation at Break	%	≥ 350	433.13		
6	10	Marking on Pipe	---	MERCURY HDPE PIPE PE100 PN8 SDR17 DN110 IS 4984 2016 CM/L 6500061705	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: Sabc P6006AD	Batch no. 25040036 dt 28.09.2022	Sabc	Reviewed & Confirmed
2.	8.1.1 Annex E	Internal Pressure Creep Rupture Test of Pipe (at 27°C for 100 h)	Report No: PTL/GEN/04117, Dated : 03.08.2022	M/s Pioneer Testing Laboratory .New Delhi	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 46 h)			
7.	8.10	Slow Crack Growth Rate Test	Sample submitted for Test report on Date 12.04.2023	CIPET- Madurai	Reviewed & Confirmed
8.	8.5	Oxidation Induction Time			

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 equipment's/Instruments are verified.

AUTHORIZED SIGNATORY
(M Balasubramanian & 267)