

MECHANICAL ENGG. DIVISION

TESTING AND RESEARCH CENTRE

RECOGNISED BY DSIR/MINISTRY OF SCIENCE & TECHNOLOGY AND BIS, ACCREDITED BY NABL IN THE FIELDS OF MECHANICAL, ELECTRICAL & CHEMICAL TESTING AND MECHANICAL & ELECTRO TECHNICAL CALIBRATION. SPONSORED BY INDUSTRIAL DEVELOPMENT BANK OF INDIA (IDBI), PROMOTED BY THE SOUTHERN INDIA ENGG. MANUFACTURERS ASSOCIATION (SIEMA) AND COIMBATORE DISTRICT SMALL SCALE INDUSTRIES ASSOCIATION (CODISSIA).

TEST REPORT NO

: 04 0243

Page 1 of 12

Date

: 2014.08.20

LIFE TEST REPORT OF DOMESTIC WATER METER

Name & Address of the Customer:

V.A. Valves

Udyog Nagar, Gadaipur P.O

Randhawa Masandan

JALANDHAR - 144 004.

Dear Customer.

We are pleased to forward the test report for the followiong sample.

Item Description

: 25mm Water Meter, Make: FEDREL

Sample S.No.

1013, 1014 & 1015

Received on

19.06.2014

Test Method

As per IS779:1994

Customer Ref.No./Date

VAV/L-2, 12.06.2014

Thanking you

Yours faithfully

Joint Director.



1. This report refers only to the particular sample(s) submitted for testing and the sample was not drawn by us.

This report shall not be reproduced except in full, unless written permission for the publication of an approved abstract has been obtained from the Director, Si'Tarc.

3. The results reported in this report are valid at the time of under the stated conditions of measurement.

4. Correction or attestation if any invalidate this report. This report strictly confidential & its use for publicity, arbitration or as evidence in legal disputes if forbidden.



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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

: 04 0243 Our Code No. Deviations from the Test Method Received On : 2014.06.19 NIL Duration of Test : 2014.06.20 to 2014.07.31 DESCRIPTION OF THE SAMPLE : Size, mm Make FEDREL : 25 Meter No : 1013 , 1014 Туре : Multi Jet & 1015 Class TESTING FACILITY Weighing Balance MI WEIG 28 Magnetic Flowmeter : PI FLOW 106, 107 Pressure Transmitter, P1 : PI PRESS 115 Hydrostatic Pressure Tester PI HYPR 35 Temperature Oven 22117101 Pressure Transmitter, P2 : PI PRESS 116 A. PERFORMANCE TEST RESULTS Flow Tests: (CI:10.2 & 11) 1. At Maximum Flow Rate (Qmax): 1013 1014 1015 S.No Parameter / Meter No 7 7 7 Maximum flow rating of meter, kl/hr ii) Minimum discharge with pressure loss 7.801 not exceeding 0.1MPa, kl/hr 7.643 8.842 0.090 0.075 0.080 iii) Pressure loss, MPa -1.404 -1.357 -1.498 $(\pm 2\%)$ Error in metering accuracy, % Result Pass Pass Pass

Tested By

(D.Angurai)

Jr.Engineer/ Mech. Engg. Division.

Approved By

(D.Anguraj)



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2. At	Nominal Flow Rate (Qn):		14.7	10.0
S.No	Parameter / Meter No	1013	1014	1015
i)	Nominal flow rating of meter, kl/hr	3.5	3.5	3.5
ii)	Minimum discharge with pressure loss		0.000	
	not exceeding 0.025 MPa, kl/hr	3.730	4.025	3.769
iii)	Pressure loss, MPa	0.021	0.019	0.020
iv)	Error in metering accuracy, % (± 2 %)	-1.137	-1.233	-1.328
A AI	Result	Pass	Pass	Pass
3. At	Transitional Flow Rate (Qt):			- 1010
S.No	Parameter / Meter No	1013	1014	1015
i)	Transitional flow rating of meter, I/hr	280	280	280
ii)	Error in metering accuracy, % (± 2 %)	-1.247	-1.437	-1.057
	Result	Pass	Pass	Pass
4. At	Minimum Flow Rate (Qmin):			1,000
S.No	Parameter / Meter No	1013	1014	1015
i)	Minimum starting flow rating of meter, I/hr	70	70	70 *
ii)	Error in metering accuracy, % (± 5%)	-2.568	-3.060	-3.552
	Result	Pass	Pass	Pass
5. Pre	essure Tightness Test (CI: 10.1):	The state of the s		-1.001
S.No	Parameter / Meter No	1013	1014	1015
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
ii)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
6. Ter	mperature Suitability Test (CI: 10.3):	-2 (3)	2000	22.116
S.No	Parameter / Meter No	1013	1014	1015
i)	Temperature , 45 deg. C	Withstood	Withstood	Withstood
ii)	Duration,10 hrs	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
Teste	188 Masure		Approved By	56
	guraj) gineer/ Mech. Engg. Division.		(D.Anguraj) Jr.Engineer/ Med	ch. Engg. Divis



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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

At I	Tests(after temperature suitability test) Maximum Flow Rate (Qmax):			
	Parameter / Meter No	1013	1014	1015
	Maximum flow rating of meter, kl/hr	7	7	7
	Minimum discharge with pressure loss		1	19199
	not exceeding 0.1MPa, kl/hr	7.664	8.647	7.873
i)	Pressure loss, MPa	0.092	0.080	0.083
/)	Error in metering accuracy, % (± 2 %)	-1.287	-1.238	-1.481
/)	Result	Pass	Pass	Pass
Δt	Nominal Flow Rate (Qn):	ence of Opera	non: 10	2.111.0
	Parameter / Meter No	1013	1014	1015
)	Nominal flow rating of meter, kl/hr	3.5	3.5	3.5
i)	Minimum discharge with pressure loss not exceeding 0.025 MPa, kl/hr	3.802	4.039	3.784
::\	Pressure loss, MPa	0.022	0.021	0.020
ii)	Error in metering accuracy, % (± 2 %)	-1.136	-1.285	-1.385
V)	Result	Pass	Pass	Pass
2 44	t Transitional Flow Rate (Qt):			
S.No	A CONTRACTOR OF THE PARTY OF TH	1013	1014	1015"
	Transitional flow rating of meter, I/hr	280	280	280
i) ii)	Error in metering accuracy, % (± 2 %)	-1.252	-1.423	-1.081
11)	Result	Pass	Pass	Pass
A A	t Minimum Flow Rate (Qmin):			
S.No		1013	1014	1015
i)	Minimum starting flow rating of meter, I/hr	3 70	70	70
ii)	Error in metering accuracy, % (± 5%)	-2.737	-3.223	-3.710
11)	Result	Pass	Pass	Pass
5 P	ressure Tightness Test (CI: 10.1 of IS 779:1994): 0.019	0.002	
SNI	Parameter / Meter No	1013	1014	1015
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
11)	Result	Pass	Pass	Pass

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7. Life Test (CI:12.4.4):

Meter No:1014 & 1015

i). Discontinuous Flow:

Nominal flow rate a).

: 3.5 kl/hr c). No. of Interruptions :

100000

Test flow rate b).

: 3.5 kl/hr d). Duration of Pauses :

15 sec

Result: Satisfactory

ii). Continuous Flow:

Nominal flow rate

: 3.5 kl/hr c). Period of Operation :

100 hrs

b). Test flow rate

: 7 kl/hr

Result: Satisfactory

Flow Tests(after life test):

1. At Maximum Flow Rate (Qmax):

		Result	Pass	Pass
iv)	Error in metering accuracy, %	(± 2 %)	-1.204	-1.303
iii)	Pressure loss, MPa		0.082	0.084
ii)	Minimum discharge with pressure not exceeding 0.1M		8.608	7.888
i)	Maximum flow rating of meter, kl/h		7	7
S.No	Parameter / Meter No		1014	1015

2. At Nominal Flow Rate (Qn):

	The state of the s	Result	Pass	Pass
iv)	Error in metering accuracy, %	(± 2 %)	-1.266	-1.316
iii)	Pressure loss, MPa	and an and	0.019	0.022
ii)	Minimum discharge with pressure not exceeding 0.025		4.028	3.881
i)	Nominal flow rating of meter, kl/hr	7	3.5	3.5
S.No	Parameter / Meter No		1014	1015

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Approved By

(D.Anguraj)

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Test Report No.

04 0243 Page : 6 of 12 Date : 2014.08.20

LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

3. At	Transitional Flow Rate (Qt):		10-0
S.No	Parameter / Meter No	1014	1015
i)	Transitional flow rating of meter, I/hr	280	280
il)	Error in metering accuracy, % (± 2 %)	-1.414	-1.017
Hit I	Result	Pass	Pass
4. At l	Minimum Flow Rate (Qmin):	1 990	1.576
S.No	Parameter / Meter No	1014	1015
i)	Minimum starting flow rating of meter, I/hr	70	70
il)	Error in metering accuracy, % (± 5%)	-3.332	-3.820
0 -	Result	Pass	Pass
5. Pre	ssure Tightness Test :	11.000	-1279
S.No	Parameter / Meter No	1014	1015
i)	1.6 MPa for 15 minutes	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood
	Result	Pass	Pass
6. Ten	nperature Suitability Test :	4 474	3,070
S.No	Parameter / Meter No	1014	1015
i)	Temperature, 45 deg. C	Withstood	Withstood
il)	Duration,10 hrs	Withstood	Withstood
1	Result	Pass	Pass
Flow	Tests(after temperature suitability test):	
	Maximum Flow Rate (Qmax):		
S.No	Parameter / Meter No	1014	1015
i)	Maximum flow rating of meter, kl/hr	7	7
ii)	Minimum discharge with pressure loss		
- h	not exceeding 0.1MPa, kl/hr	8.615	7.916
iii)	Pressure loss, MPa	0.082	0.081
iv)	Error in metering accuracy, % (± 2 %)	-1.176	-1.422
	Result	Pass	Pass

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(D.Anguraj)



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

	LEE TEST REPU	RT OF DO	MESTIC WA	
2. At	Nominal Flow Rate (Qn):	ated as per l	S 778 1994	
S.No	Parameter / Meter No		1014	1015
i)	Nominal flow rating of meter, kl/hr	ng and proces	3.5	3.5
ii)	Minimum discharge with pressure I	loss		white to ensu
	not exceeding 0.025	MPa, kl/hr	4.043	3.841
iii)	Pressure loss, MPa		0.020	0.022
iv)	Error in metering accuracy, %	(± 2 %)	-1.229	-1.328
	the resilience our may to leather	Result	Pass	Pass
3. At	Transitional Flow Rate (Qt):			
S.No	Parameter / Meter No		1014	1015
i)	Transitional flow rating of meter, I/	hr	280	280
il)	Error in metering accuracy, %	(± 2 %)	-1.449	-1.273
	he transparent window willely easi	Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):	hinse or othe	r sullable metho	ed of mibustic
S.No	Parameter / Meter No	e same mater	1014	1015

4. At	Winimum Flow Rate (Qmin):	hinge or omer	Suitable mellyrid	no da rabustico
S.No	Parameter / Meter No	e same malera	1014	1015
i)	Minimum starting flow rating of me	eter, I/hr	70	70
il)	Error in metering accuracy, %	(± 5%)	-3.374	-3.870
		100	1,50	

5. Pressure Tightnes	s Test :
----------------------	----------

9 9	Result	Pass	Pass
il)	2.0 MPa for 1 minute	Withstood	Withstood
i)	1.6 MPa for 15 minutes	Withstood	Withstood
S.No	Parameter / Meter No	1014	1015

B. CONSTRUCTION

Meter No. : 1013

I. Before Dismantling (CI: 7):

1). General(CI: 7.1):

When the meter has been subjected to an accidental reversal of flow, it is capable of withstanding it without any deterioration or change of their metrological properties.

Result: Satisfactory

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(D.Anguraj)



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Result: Satisfactory

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2). Body(CI: 7.2):

The body has free from manufacturing and processing defects. And it is not repaired by plugging, welding or by the addition of materials. Internal shape of the body has to ensure smooth flow of water and easy dismantling.

3). Registration Box(CI 7.3):

The registration box may be provided with escape hole(s) for minimizing the accumulation of water.

Result: Not applicable.

4). Cap(CI: 7.4):

The cap and registration box are integral, the material for cap is the same as used for registration box. The cap has so designed and fixed to the registration box as to avoid entry of water and dirt. The transparent window which covers the dial has inserted from the inside into the cap. The protective lid is secured by a robust hinge or other suitable method of robust construction. Cap ring where applicable should be of the same material as of the cap.

Result: Satisfactory

CI: 7.4.1: Transparent window covering the dial should be provided with a wiper on the inner side for wiping off condensed water.

Result: Not applicable.

5). Connections(CI: 7.5):

The meter casing has been fitted with pipe line by means of two cylindrical nipples with connecting nuts. The threads on the connection has conforming to IS 2643 (Pt.1 to 3): 1975.

Result: Satisfactory

6). Strainers(CI: 7.6):

Water meters have been provided with strainers. They are rigid, easy to remove and clean and is fitted on the inlet side of the water meter. It is possible to remove and clean the strainer in such a way as not to disturb the registration box or tampering with it. The strainer has a total area of holes not less than twice the area of the nominal inlet bore of the pipe to which the meter is connected except in the case of single jet inferential type of meters. The free area of holes is such that it complies with the head loss at nominal and maximum flow rates. An external strainer is fitted on the inlet side satisfying the above requirements

Result: Satisfactory

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(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

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D.Angurai)

(D.Anguraj)



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7). Impeller and Piston(CI: 7.7):

CI: 7.7.1: Impeller and impeller shaft assembly has rest on a self-lubricating bearing of low frictional resistance.

Result: Satisfactory

8). Impeller and Measuring Chamber(CI: 7.8):

The impeller chamber and measuring chamber has a rigid construction and withstand to internal stress.

Result: Satisfactory

9). Gears and Pinions(CI: 7.9):

Gears and pinions has constructed properly and smoothly mesh with each other and has firmly fitted on their shafts.

Result: Satisfactory

10). Bearings(CI:7.10):

Impeller bearing has suitably grounded and polished. It shape has a provision to prevent the penetration to sand and to preclude the deposit of anything in solution or suspension in water and to facilitate the washing away of such deposits by the water flow. Gear shaft has freely revolve in their bearing.

11). Counter(CI:7.11):

The counter has a combination of pointer and cyclometer type and the pointers reading is in clockwise direction. The rollers of cyclometer counter and the pointer are made of plastic and self-lubricating type.

Result: Satisfactory

12). Dial(CI: 7.12):

The dial has made of plastic and has indestructible marking with good legibility.

Result: Satisfactory

13). Regulator(CI: 7.13)

An internal regulator has been provided on the meter and it is not accessible from out side.

Result: Satisfactory

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Approved, By

(D.Anguraj)



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

14). Sealing(CI:7.14):

Sealing hole has been provided and the meter has sealed properly to render it impossible to obtain access to the measuring unit including registration box and cap without breaking the seal. Sealing wire is made of rust proof material.

Result: Satisfactory

15). Frost Protection Device(CI:7.15):

Result: Not Applicable

Indicating Device(CI: 8):

- 1). CI: 8.1: The indicating device is capable of record 99999 m³
- 2). C1: 8.2: The indicator has allow by simple juxtaposition of its various constituent elements, a reliable, easy and unambiguous reading of the volume of water measured and expressed in m³. The volume is indicated by the combination of pointers on circular scales and in-line consecutive digits.
- 3). CI: 8.2.1: The m³ and its multiples have been indicated in black and sub-multiples of m³ in red. This color coding applies to the pointers on circular scale type indicating devices and to the drum in in-line digit indicating devices. The actual or apparent height of the digits on the drums is not being less than 4mm.

For digital indicators the visible displacement of all digits is upward in value. The advance of any given digital unit is completed while the digit of the immediately next lower value describes the last tenth of its travel. The drum showing the digits of lowest value may move continuously. The whole number of m^3 is clearly indicated.

- 4). CI: 8.2.2: The indicators with pointer has rotates in a clock-wise direction. The value in 'kl' for each scale division are accompanied by a multiplying factor of x0.0001m³, x0.001m³, 0.01m³ and 0.1m³
- 5). CI: 8.2.3(a): The unit symbol 'm3' is mentioned in immediate vicinity of the indicator.

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Jr.Engineer/ Mech. Engg. Division.

Approved, By

(D.Angura



Test Report No.: 04 0243 Page:11 of 12 Date: 2014.08.20

LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

6). CI: 8.2.3(b): The fastest-moving visible graduated element, the control element, the scale interval of which is known as "Verification Scale Interval" has been move continuously.

Result: Satisfactory

7). CI: 8.2.4: The length of verification scale interval is not less than 1mm and not more than 5mm. The scale is consist of lines of equal thickness not exceeding one quarter of the distance between the axes of two consecutive lines and differing only in length.

The width of the pointer index tip is not exceeding one quarter of the distance between two scale divisions, and it is not greater than 0.5mm.

Result: Satisfactory

8). CI: 8.3 Value of Verification Scale Division: The maximum value of verification scale interval is 0.0001m3

9). CI:8.4 Accelerating Device:

The vane provided on the pressure plate does the purpose of the accelerating device. During the testing, it is ensured that, to increasing the speed of the meter is not possible by using this device, when the flow is below Qmin.

II. After Dismantling(CI:12.4.3 & 12.4.4):

After the two meters have undergone the life test and all the type tests, one of the meters (Meter No: 1014), which has undergone greater deterioration in its performance under the flow test is dismantled completely to its component parts and examined with a view to ensuring that there is no undue wear or distortion with regard to dimensions and tolerances within specified values. Particular attention is also paid to impeller, impeller shaft, bearings, gears and pinions, pivots and gland packing. After studying all the components, all parts are reassembled. There is no difficulty and force for fitting needed during assembly.

Result: Satisfactory

Tested By

Angurai)

Jr.Engineer/ Mech. Engg. Division

Approved By

(D.Anguraj)



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

S.	Nomenclature	Standard	(3)	Meter No		
No		requirement	1013	1014	1015	
1)	Meter Size, mm	25	25	25	25	
2)	Threads	G 11/4B	G 11/4B	G 11/4B	G 11/4B	
3)	Nominal flow rate, kl/hr	3.5	3.5	3.5	3.5	
4)	Length of Thread on the Body(a), mm	12 (min.)	16.3	16.4	16.1	
5)	Length of Thread on the Body(b), mm	16 (min.)	18.7	18.5	18.8	
6)	Length (with Nipple), mm	380 (± 5.00)	380.8	381.1	380.5	
7)	Length (without Nipple), mm	260 (+ 0, - 2)	259.7	259.5	259.2	
8)	Width, mm	170 (max.)	102.9	103.3	103.1	
9)	Height(H1), mm	65 (max.)	34.8	35.1	34.9	
10)	Height(H2), mm	260 (max.)	77.1	77.4	77.3	
	anou A De L	Result	Pass	Pass	Pass	

D. VERIFICATION SCALE INTERVAL

: Not Applicable

E. MARKING (CI:14.1)

a). Trade Mark: Marked

b). Sl.No : Marked

c). Nom. Size : Marked

d). Class of water meter

: Marked

e). Direction of flow

: Marked

f). Year of manufacturing

: Marked

and SI. No

Result: Satisfactory

Remarks:

--- End of test report ---

Tested By

(D.Anguraj)

Jr. Engineer/ Mech. Engg. Division.

Approved, By

(D.Anguraj)



MECHANICAL ENGG. DIVISION

Si'Tarc

SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE

RECOGNISED BY DSIR/MINISTRY OF SCIENCE & TECHNOLOGY AND BIS, ACCREDITED BY NABL IN THE FIELDS OF MECHANICAL, ELECTRICAL & CHEMICAL TESTING AND MECHANICAL & ELECTRO TECHNICAL CALIBRATION. SPONSORED BY INDUSTRIAL DEVELOPMENT BANK OF INDIA (IDBI), PROMOTED BY THE SOUTHERN INDIA ENGG. MANUFACTURERS ASSOCIATION (SIEMA) AND COIMBATORE DISTRICT SMALL SCALE INDUSTRIES ASSOCIATION (CODISSIA).

TEST REPORT NO

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Date

2014.08.21

LIFE TEST REPORT OF DOMESTIC WATER METER

Name & Address of the Customer:

V.A. Valves

Udyog Nagar, Gadaipur P.O

Randhawa Masandan

JALANDHAR - 144 004.

Dear Customer,

We are pleased to forward the test report for the followiong sample.

Item Description

40mm Water Meter, Make: FEDREL

Sample S.No.

: 1007, 1008 & 1009

Received on

: 01.07.2014

Test Method

As per IS779:1994

Customer Ref.No./Date

-, 03.04.2014

Thanking you

Yours faithfully

K. Gunabal)

Joint Director.



NOTE

1. This report refers only to the particular sample(s) submitted for testing and the sample was not drawn by us.

2. This report shall not be reproduced except in full, unless written permission for the publication of an approved abstract has been obtained from the Director, Si'Tarc.

3. The results reported in this report are valid at the time of under the stated conditions of measurement.

4. Correction or attestation if any invalidate this report. This report strictly confidential & its use for publicity, arbitration or as evidence in legal disputes if forbidden.





SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE

Test Report No.

: 04 0246

Jr. Engineer/ Mech. Engg. Division.

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Engineer/ Mech. Engg. Division.

LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

Our C	ode No. : 04 0246	Deviations from	the Test Method	
Recei	ved On : 2014.07.01	NIL		
Durati	on of Test : 2014.07.01 to 2014.08.16	1001		
	Vondnar now caring of mela. When	10	10	10
man and	RIPTION OF THE SAMPLE :			
Make	Control of the state of the sta	Size, mm		
Туре		Meter No		
Class	mor in mate: B accurate to		& 1009	
	ING FACILITY	Pasa	Pass	Pass
Magn	etic Flowmeter : PI FLOW 107, 108	Weighing Bala	ance	: MI WEIG 28
Press	ure Transmitter, P1 : PI PRESS 115	Hydrostatic Pi	ressure Tester	: PI HYPR 35
Press	ure Transmitter, P2 : PI PRESS 116	Temperature	Oven	: 22117101
A.	PERFORMANCE TEST RESULTS			
Flow	Tests: (CI:10.2 & 11)			
1. At	Maximum Flow Rate (Qmax):			
S.No	Parameter / Meter No	1007	1008	1009
i)	Maximum flow rating of meter, kl/hr	20	20	20 🔻
ii)	Minimum discharge with pressure loss	2.377	2 125	3.721
	not exceeding 0.1MPa, kl/hr	21.960	22.068	21.888
iii)	Pressure loss, MPa	0.090	0.091	0.087
iv)	Error in metering accuracy, % (± 2 %)	0.880	0.681	0.582
	Result	Pass	Pass	Pass
		- EXPLOSIONS	refutitions	viruisaiea
Teste			Approved By	TVIIII SIONE
1	1486		10/4-	8
1) P 0		100	8
(D.An	gúraj)		(D.Anguraj)	

Si'Tarc Esta



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

S.No	Parameter / Meter No	1007	1008	1009
i)	Nominal flow rating of meter, kl/hr	10	10	10
ii)	Minimum discharge with pressure loss		21 536	21,628
NT)	not exceeding 0.025 MPa, kl/hr	11.376	11.592	11.124
iii)	Pressure loss, MPa	0.020	0.018	0.021
iv)	Error in metering accuracy, % (± 2 %)	0.775	1.040	0.908
0.11	Result	Pass	Pass	Pass
3. At	Transitional Flow Rate (Qt):	744	1001	1009
S.No	Parameter / Meter No	1007	1008	1009
i)	Transitional flow rating of meter, I/hr	800	800	800
ii)	Error in metering accuracy, % (± 2 %)	0.684	0.783	0.586
	Result	Pass	Pass	Pass
4. At	Minimum Flow Rate (Qmin):	0.746	1 (84	1017
S.No	Parameter / Meter No	1007	1008	1009
i)	Minimum starting flow rating of meter, I/hr	200	200	200
ii)	Error in metering accuracy, % (± 5%)	2.477	2.725	3.221
	Result	Pass	Pass	Pass
5. Pre	essure Tightness Test (CI: 10.1):	2/8/2/2	0.000	0.550
S.No	Parameter / Meter No	1007	1008	1009
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
ii)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
6. Ter	mperature Suitability Test (Cl: 10.3):	7 491	2.002	3.227
S.No	Parameter / Meter No	1007	1008	1009
i)	Temperature , 45 deg. C	Withstood	Withstood	Withstood
ii)	Duration,10 hrs	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
Teste (D.An	d By guraj)		Approved By (D.Anguraj)	18
	gineer/ Mech Enga Division		Engineer/ Mech	Enga Divisio

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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

SNO	Parameter / Meter No	1007	1008	1009
)	Maximum flow rating of meter, kl/hr	20	20	20
i)	Minimum discharge with pressure loss			
,	not exceeding 0.1MPa, kl/hr	21.780	21.636	21.528
iii)	Pressure loss, MPa	0.091	0.093	0.090
iv)	Error in metering accuracy, % (± 2 %)	0.798	0.698	0.500
1.00	Result	Pass	Pass	Pass
2. At	Nominal Flow Rate (Qn):	Penoa er Os	eration	100 mm
S.No	Parameter / Meter No	1007	1008	1009
i)	Nominal flow rating of meter, kl/hr	10	10	10
ii)	Minimum discharge with pressure loss			
	not exceeding 0.025 MPa, kl/hr	11.088	11.340	11.196
iii)	Pressure loss, MPa	0.020	0.021	0.023
iv)	Error in metering accuracy, % (± 2 %)	0.746	1.011	1.077
	Result	Pass	Pass	Pass
3. At	: Transitional Flow Rate (Qt):			
S.No	Parameter / Meter No	1007	1008	1009
i)	Transitional flow rating of meter, I/hr	800	800	800
il)	Error in metering accuracy, % (± 2 %)	0.656	0.855	0.556
	Result	Pass	Pass	Pass
4. At	Minimum Flow Rate (Qmin):			
S.No	Parameter / Meter No	1007	1008	1009
i)	Minimum starting flow rating of meter, I/hr	200	200	200
ii)	Error in metering accuracy, % (± 5%)	2.491	2.982	3.227
-	Result	Pass	Pass	Pass
	essure Tightness Test (CI: 10.1 of IS 779:1994)	A STATE OF THE STA	0610	
S.No	Parameter / Meter No	1007	1008	1009
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7. Li	fe Test (CI :12.4.4):			183711	
Meter	No :1007 & 1009				
i). Dis	scontinuous Flow:				
	a). Nominal flow rate : 10	kl/hr	c). No. of Interru	ptions :	100000
	b). Test flow rate : 10	kl/hr	d). Duration of P	auses :	15 sec
ii). Co	ontinuous Flow:				Satisfactory
	a). Nominal flow rate : 10		c). Period of Ope	eration:	100 hrs
	b). Test flow rate : 20	kl/hr			
				Result:	Satisfactory
Flow	/ Tests(after life test) :				
1. At	Maximum Flow Rate (Qmax):		Withstood	Withstood	
S.No	Parameter / Meter No		1007	1009	
i)	Maximum flow rating of meter, kl/hr	Rusul	. 20	20	
ii)	Minimum discharge with pressure loss				4
	not exceeding 0.1MPa, kl/h	nr	21.708	21.636	
iii)	Pressure loss, MPa		0.091	0.089	
iv)	Error in metering accuracy, % (±	2 %)	0.732	0.533	
		Result	Pass	Pass	
2. At	Nominal Flow Rate (Qn):	ity tes	0:		
S.No	Parameter / Meter No		1007	1009	100
) No	Nominal flow rating of meter, kl/hr		10	10	
ii)	Minimum discharge with pressure loss		20		
	not exceeding 0.025 MPa,		10.908	11.016	
iii)	Pressure loss, MPa	9	0.020	0.019	
iv)		2 %)	0.790	1.054	
iv)	l'Error in metering accur acy 34	Result	Pass	Pass	A Service

Tested By

Anguraj)

Jr.Engineer/ Mech. Engg. Division.

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(D.Anguraj)



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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

S.No	Transitional Flow Rate (Qt): Parameter / Meter No	1007	1009
)	Transitional flow rating of meter, I/hr	800	800
1)	Error in metering accuracy, % (± 2 %)	0.651	0.552
P	Result	Pass	Pass
. At	Minimum Flow Rate (Qmin):	0.585	
S.No	Parameter / Meter No	1007	1009
)	Minimum starting flow rating of meter, I/hr	200	200
1)	Error in metering accuracy, % (± 5%)	2.436	3.089
	Result	Pass	Pass
. Pre	ssure Tightness Test :	0.000	7-67-
S.No	Parameter / Meter No	1007	1009
	1.6 MPa for 15 minutes	Withstood	Withstood
)	2.0 MPa for 1 minute	Withstood	Withstood
Line	Result	Pass	Pass
. Ten	nperature Suitability Test :	0.070	- Land
S.No	Parameter / Meter No	1007	1009
TOTAL	Temperature, 45 deg. C	Withstood	Withstood
)	Duration,10 hrs	Withstood	Withstood
7.6	Result	Pass	Pass
	Tests(after temperature suitability test) Maximum Flow Rate (Qmax):	<u>):</u>	
S.No	Parameter / Meter No	1007	1009
Me	Maximum flow rating of meter, kl/hr	20	20
)	Minimum discharge with pressure loss		
	not exceeding 0.1MPa, kl/hr	21.708	21.564
i)	Pressure loss, MPa	0.089	0.091
/)	Error in metering accuracy, % (± 2 %)	0.967	0.693
	Result	Pass	Pass

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

S.No	Parameter / Meter No	1007	1009
i)	Nominal flow rating of meter, kl/hr	10	10.0
ii)	Minimum discharge with pressure loss	and of the	local final to a
	not exceeding 0.025 MPa, kl/hr	11.124	11.196
iii)	Pressure loss, MPa	0.018	0.019
iv)	Error in metering accuracy, % (± 2 %)	0.713	0.912
	Result	Pass	Pass
3. At	Transitional Flow Rate (Qt):		
S.No	The state of the s	1007	1009
i)	Transitional flow rating of meter, I/hr	800	800
il)	Error in metering accuracy, % (± 2 %)	0.630	0.531
	The transport will be the Result	Pass	Pass
	Minimum Flow Rate (Qmin):	ther suitable m	listed of rebu
S.No	Parameter / Meter No	1007	1009
i)	Minimum starting flow rating of meter, I/hr	200	200
il)	Error in metering accuracy, % (± 5%)	2.822	3.554
	Result	Pass	Pass
	ssure Tightness Test:		No
	Parameter / Meter No	1007	1009
)	1.6 MPa for 15 minutes	Withstood	Withstood
1)	2.0 MPa for 1 minute	Withstood	Withstood
61	Result	Pass	Pass

B. CONSTRUCTION

Meter No.: 1008

I. Before Dismantling (CI: 7):

1). General(CI: 7.1):

When the meter has been subjected to an accidental reversal of flow, it is capable of withstanding it without any deterioration or change of their metrological properties.

Result: Satisfactory

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2). Body(CI: 7.2):

The body has free from manufacturing and processing defects. And it is not repaired by plugging, welding or by the addition of materials. Internal shape of the body has to ensure smooth flow of water and easy dismantling.

Result: Satisfactory

3). Registration Box(CI 7.3):

The registration box may be provided with escape hole(s) for minimizing the accumulation of water.

Result: Not applicable.

4). Cap(CI: 7.4):

The cap and registration box are integral, the material for cap is the same as used for registration box. The cap has so designed and fixed to the registration box as to avoid entry of water and dirt. The transparent window which covers the dial has inserted from the inside into the cap. The protective lid is secured by a robust hinge or other suitable method of robust construction. Cap ring where applicable should be of the same material as of the cap

Result: Satisfactory

CI: 7.4.1: Transparent window covering the dial should be provided with a wiper on the inner side for wiping off condensed water.

Result: Not applicable.

5). Connections(CI: 7.5):

The meter casing has been fitted with pipe line by means of two cylindrical nipples with connecting nuts. The threads on the connection has conforming to IS 2643 (Pt.1 to 3): 1975.

Result: Satisfactory

6). Strainers(CI: 7.6):

Water meters have been provided with strainers. They are rigid, easy to remove and clean and is fitted on the inlet side of the water meter. It is possible to remove and clean the strainer in such a way as not to disturb the registration box or tampering with it. The strainer has a total area of holes not less than twice the area of the nominal inlet bore of the pipe to which the meter is connected except in the case of single jet inferential type of meters. The free area of holes is such that it complies with the head loss at nominal and maximum flow rates. An external strainer is fitted on the inlet side satisfying the above requirements

Result: Satisfactory

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7). Impeller and Piston(CI: 7.7):

CI: 7.7.1: Impeller and impeller shaft assembly has rest on a self-lubricating bearing of low frictional resistance.

Result: Satisfactory

8). Impeller and Measuring Chamber(CI: 7.8):

The impeller chamber and measuring chamber has a rigid construction and withstand to internal

Result: Satisfactory

9). Gears and Pinions(CI: 7.9):

Gears and pinions has constructed properly and smoothly mesh with each other and has firmly fitted on their shafts.

Result: Satisfactory

10). Bearings(CI:7.10):

Impeller bearing has suitably grounded and polished. It shape has a provision to prevent the penetration to sand and to preclude the deposit of anything in solution or suspension in water and to facilitate the washing away of such deposits by the water flow. Gear shaft has freely revolve in their bearing.

11). Counter(CI:7.11):

The counter has a combination of pointer and cyclometer type and the pointers reading is in clockwise direction. The rollers of cyclometer counter and the pointer are made of plastic and self-lubricating type.

Result: Satisfactory

12). Dial(CI: 7.12):

The dial has made of plastic and has indestructible marking with good legibility.

Result: Satisfactory

13). Regulator(CI: 7.13)

An internal regulator has been provided on the meter and it is not accessible from out side.

Result: Satisfactory

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

14). Sealing(CI:7.14):

Sealing hole has been provided and the meter has sealed properly to render it impossible to obtain access to the measuring unit including registration box and cap without breaking the seal. Sealing wire is made of rust proof material.

Result: Satisfactory

15). Frost Protection Device(CI:7.15):

Result: Not Applicable

Indicating Device(CI: 8):

- 1). CI: 8.1: The indicating device is capable of record 99999 m3
- 2). CI: 8.2: The indicator has allow by simple juxtaposition of its various constituent elements, a reliable, easy and unambiguous reading of the volume of water measured and expressed in m³. The volume is indicated by the combination of pointers on circular scales and in-line consecutive digits.
- 3). CI: 8.2.1: The m³ and its multiples have been indicated in black and sub-multiples of m³ in red. This color coding applies to the pointers on circular scale type indicating devices and to the drum in in-line digit indicating devices. The actual or apparent height of the digits on the drums is not being less than 4mm.

For digital indicators the visible displacement of all digits is upward in value. The advance of any given digital unit is completed while the digit of the immediately next lower value describes the last tenth of its travel. The drum showing the digits of lowest value may move continuously. The whole number of \mathbf{m}^3 is clearly indicated.

- 4). CI: 8.2.2: The indicators with pointer has rotates in a clock-wise direction. The value in 'kl' for each scale division are accompanied by a multiplying factor of x0.0001m³, x0.001m³, 0.01m³ and 0.1m³
- 5). CI: 8.2.3(a): The unit symbol 'm3' is mentioned in immediate vicinity of the indicator.

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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

6). CI: 8.2.3(b): The fastest-moving visible graduated element, the control element, the scale interval of which is known as "Verification Scale Interval" has been move continuously.

Result: Satisfactory

7). CI: 8.2.4: The length of verification scale interval is not less than 1mm and not more than 5mm. The scale is consist of lines of equal thickness not exceeding one quarter of the distance between the axes of two consecutive lines and differing only in length.

The width of the pointer index tip is not exceeding one quarter of the distance between two scale divisions, and it is not greater than 0.5mm.

Result: Satisfactory

8). CI: 8.3 Value of Verification Scale Division: The maximum value of verification scale interval is 0.0001m3.

9). CI:8.4 Accelerating Device:

The vane provided on the pressure plate does the purpose of the accelerating device. During the testing, it is ensured that, to increasing the speed of the meter is not possible by using this device, when the flow is below Qmin.

II. After Dismantling(CI:12.4.3 & 12.4.4):

After the two meters have undergone the life test and all the type tests, one of the meters (Meter No: 1009), which has undergone greater deterioration in its performance under the flow test is dismantled completely to its component parts and examined with a view to ensuring that there is no undue wear or distortion with regard to dimensions and tolerances within specified values. Particular attention is also paid to impeller, impeller shaft, bearings, gears and pinions, pivots and gland packing. After studying all the components, all parts are reassembled. There is no difficulty and force for fitting needed during assembly.

Result: Satisfactory

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(D.Anguraj)



SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

S.		Standard	Meter No		
No	Nomenclature	requirement	1007	1008	1009
1)	Meter Size, mm	40	40	40	40
2)	Threads	G 2B	G 2B	G 2B	G 2B
3)	Nominal flow rate, kl/hr	10	10.0	10.0	10.0
4)	Length of Thread on the Body(a), mm	13 (min.)	18.1	18.2	17.9
5)	Length of Thread on the Body(b), mm	20 (min.)	22.1	22.3	22.3
6)	Length (with Nipple), mm	430 (± 5.00)	431.0	430.5	431.0
7)	Length (without Nipple), mm	300 (+ 0, - 2)	299.4	299.2	299.4
8)	Width , mm	210 (max.)	127.3	127.5	127.4
9)	Height(H1), mm	75 (max.)	35.6	35.5	35.5
10)	Height(H2), mm	300 (max.)	115.7	115.8	115.5
	1 1 A per 879	Result	Pass	Pass	Pass

D. VERIFICATION SCALE INTERVAL

: Not Applicable

E. MARKING (CI:14.1)

a). Trade Mark: Marked

b). Sl.No : Marked

c). Nom. Size : Marked

d). Class of water meter

: Marked

e). Direction of flow

: Marked

f). Year of manufacturing

: Marked

and SI. No

Result: Satisfactory

Remarks:

--- End of test report ---

Tested By

D Angurai)

Jr.Engineer/ Mech. Engg. Division.

Approved By

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MECHANICAL ENGG. DIVISION

TESTING AND RESEARCH CENTRE

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TEST REPORT NO

04 0237

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Date : 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER

Name & Address of the Customer:

V.A. Valves

Udyog Nagar, Gadaipur P.O.

Randhawa Masandan

JALANDHAR - 144 004.

Dear Customer.

We are pleased to forward the test report for the following sample.

Item Description

15mm Water Meter, Make: FEDREL

Sample S.No.

1001, 1002 & 1003

Received on

18.04.2014

Test Method

As per IS779:1994

Customer Ref.No./Date

ZAIPL/SITARC/2013-14,08.04.2014

Thanking you

Yours faithfully

Joint Director.



1. This report refers only to the particular sample(s) submitted for testing and the sample was not drawn by us.

2. This report shall not be reproduced except in full, unless written permission for the publication of an approved abstract has been obtained from the Director, Si'Tarc.

3. The results reported in this report are valid at the time of under the stated conditions of measurement.

4. Correction or attestation if any invalidate this report. This report strictly confidential & its use for publicity, arbitration or as evidence in legal disputes if forbidden.



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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

Our Code No.

: 04 0237

Deviations from the Test Method

Received On

: 2014.04.18

NIL

Duration of Test : 2014.04.19 to 2014.06.18

DESCRIPTION OF THE SAMPLE :

Size, mm

: 15

Туре

Make

FEDREL : Multi Jet

Meter No

: 1001, 1002

Class

& 1003

TESTING FACILITY

Magnetic Flowmeter

: PI FLOW 106

Weighing Balance

: MI WEIG 28

Pressure Transmitter, P1

: PI PRESS 115

Hydrostatic Pressure Tester

: PI HYPR 35

Pressure Transmitter, P2

: PI PRESS 116

Temperature Oven

22117101

A. PERFORMANCE TEST RESULTS

Flow Tests: (CI:10.2 & 11)

1. At Maximum Flow Rate (Qmax):

S.No	Parameter / Meter No		1001	1002	1003
i)	Maximum flow rating of meter, kl/	hr	3	3	3 *
ii)	Minimum discharge with pressure	loss			
	not exceeding 0.1MPa	a, kl/hr	3.586	3.593	3.578
iii)	Pressure loss, MPa	Persual	0.063	0.071	0.071
iv)	Error in metering accuracy, %	(± 2 %)	-0.967	0.870	-1.468
	TOTAL MANAGEMENT AND THE STREET	Result	Pass	Pass	Pass

Tested By

Jr. Engineer/ Mech. Engg. Division.

Approved By

(H.Sahul Hameed)

Engineer/ Mech. Engg. Division.



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2. At	Nominal Flow Rate (Qn):	t)		
S.No	Parameter / Meter No	1001	1002	1003
)	Nominal flow rating of meter, kl/hr	1.5	1.5	1.5
i)	Minimum discharge with pressure loss			
	not exceeding 0.025 MPa, kl/hr	1.955	1.937	1.879
iii)	Pressure loss, MPa	0.015	0.018	0.023
v)	Error in metering accuracy, % (± 2 %)	-1.227	-0.966	-0.443
	Result	Pass	Pass	Pass
3. At	Transitional Flow Rate (Qt):			
S.No	Parameter / Meter No	1001	1002	1003
i)	Transitional flow rating of meter, I/hr	120	120	120
ii)	Error in metering accuracy, % (± 2 %)	-1.324	-0.419	-1.324
19	Result	Pass	Pass	Pass
4. At	Minimum Flow Rate (Qmin):			
S.No	Parameter / Meter No	1001	1002	1003
i)	Minimum starting flow rating of meter, I/hr	30	30	30,
ii)	Error in metering accuracy, % (± 5%)	1.784	-2.801	-2.801
1	Result	Pass	Pass	Pass
5. Pre	essure Tightness Test (CI: 10.1):			
S.No		1001	1002	1003
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
ii)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
6. Te	mperature Suitability Test (CI: 10.3):			
S.No	Parameter / Meter No	1001	1002	1003
i)	Temperature , 45 deg. C	Withstood	Withstood	Withstood
ii)	Duration,10 hrs			
	Result	Pass	Pass	Pass
Teste	ed By	G.	Approved By	
(D.Ar	nguraj) Si Ta	rc RESURCH	(H.Sahul Hamee	
Jr.En	gineer/ Mech. Engg. Division.	AND I	Engineer/ Mech	. Eligg. Divisio



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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

S.No	Parameter / Meter No	1001	1002	1003
i)	Maximum flow rating of meter, kl/hr	3	3	3
ii)	Minimum discharge with pressure loss		=	7.0
	not exceeding 0.1MPa, kl/hr	3.535	3.564	3.550
iii)	Pressure loss, MPa	0.096	0.092	0.094
iv)	Error in metering accuracy, % (± 2 %)	-0.926	1.009	-1.313
	Result	Pass	Pass	Pass
	Nominal Flow Rate (Qn):	AN AMPRICATION		
S.No	Parameter / Meter No	1001	1002	1003
i)	Nominal flow rating of meter, kl/hr	1.5	1.5	1.5
ii)	Minimum discharge with pressure loss			
	not exceeding 0.025 MPa, kl/hr	1.955	1.937	1.879
iii)	Pressure loss, MPa	0.024	0.022	0.023
iv)	Error in metering accuracy, % (± 2 %)	-1.190	-0.987	-1.393
	Result	Pass	Pass	Pass
	Transitional Flow Rate (Qt):			
S.No	Parameter / Meter No	1001	1002	1003
i)	Transitional flow rating of meter, I/hr	120	120	120
il)	Error in metering accuracy, % (± 2 %)	-1.461	-0.981	-1.461
	Result	Pass	Pass	Pass
	Minimum Flow Rate (Qmin):			
	Parameter / Meter No	1001	1002	1003
)	Minimum starting flow rating of meter, I/hr	30	30	30
i)	Error in metering accuracy, % (± 5%)	-2.809	-1.847	-1.847
	Result	Pass	Pass	Pass
	ssure Tightness Test (CI: 10.1 of IS 779:1994)		021	
	Parameter / Meter No	1001	1002	1003
)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
1)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
Tested	TERRITAL TERRITAL	Pass	Pass	Pass
D.Ang	Si Tarc)		Approved By (H.Sahul Hamee Engineer/ Mech.	



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7. Life Test (CI:12.4.4): Meter No :1001 & 1003 i). Discontinuous Flow:

a). Nominal flow rate : 1.5 kl/hr c). No. of Interruptions : 100000

b). Test flow rate : 1.5 kl/hr d). Duration of Pauses :

ii). Continuous Flow:

a). Nominal flow rate : 1.5 kl/hr c). Period of Operation :

Result: Satisfactory 100 hrs

b). Test flow rate

: 3 kl/hr

Result: Satisfactory

Flow Tests(after life test):

1. At Maximum Flow Rate (Qmax):

		Result	Pass	Pass
v)	Error in metering accuracy, %	(± 2 %)	-0.988	-1.377
iii)	Pressure loss, MPa		0.094	0.096
****	not exceeding 0.1M	Pa, kl/hr	3.539	3.560
ii)	Minimum discharge with pressure	loss		
i)	Maximum flow rating of meter, kl/h	nr	3	3
S.No	Parameter / Meter No		1001	1003

2. At Nominal Flow Rate (Qn):

		Result	Pass	Page
V)	Error in metering accuracy, %	(± 2 %)	-1.200	-0.400
iii)	Pressure loss, MPa	Pa site	0.023	0.021
	not exceeding 0.02	5 MPa, kl/hr	1.955	1.937
ii)	Minimum discharge with pressure			
1)	Nominal flow rating of meter, kl/hr		1.5	1.5
S.No	Parameter / Meter No		1001	1003
-				

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Jr.Engineer/ Mech. Engg. Division.

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

S.No	Transitional Flow Rate (Qt): Parameter / Meter No	1001	1003
i)	Transitional flow rating of meter, I/hr	120	120
il)	Error in metering accuracy, % (± 2 %)	-1.294	-1.790
	Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):		200
S.No	Parameter / Meter No	1001	1003
i)	Minimum starting flow rating of meter, I/hr	30	30
il)	Error in metering accuracy, % (± 5%)	-2.213	-3.221
	Result	Pass	Pass
5. Pre	ssure Tightness Test :		4 3 2 2
S.No	Parameter / Meter No	1001	1003
i)	1.6 MPa for 15 minutes	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood
	Result	Pass	Pass
6. Ter	nperature Suitability Test :	2645	
S.No	Parameter / Meter No	1001	1003
i)	Temperature, 45 deg. C	Withstood	Withstood
il)	Duration,10 hrs	The state of the s	
	Result	Pass	Pass
			AND SECT
Flow	Tests(after temperature suitability test)		
	Tests(after temperature suitability test) Maximum Flow Rate (Qmax):	Pass	
	Maximum Flow Rate (Qmax): Parameter / Meter No	Pars	1003
1. At	Maximum Flow Rate (Qmax): Parameter / Meter No	1001	1003
1. At S.No	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr	1001	1003
1. At S.No i)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss	1001	3
1. At S.No i)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr	1001	3.521
1. At S.No i)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss not exceeding 0.1MPa, kl/hr Pressure loss, MPa	1001 3 3.532 0.095	3 3.521 0.093
1. At S.No ii) iii)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss not exceeding 0.1MPa, kl/hr	1001 3 3.532	3.521



TESTING AND RESEARCH CENTRE

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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

	Nominal Flow Rate (Qn): Parameter / Meter No		1001	1003
i)	Nominal flow rating of meter, kl/hr		1.5	1.5
ii)	Minimum discharge with pressure loss	- 10000		
,	not exceeding 0.025 MP	a, kl/hr	1.955	1.937
iii)	Pressure loss, MPa		0.022	0.021
iv)	Error in metering accuracy, %	(± 2 %)	-1.216	-0.420
	The state of the s	Result	Pass	Pass
3. At	Transitional Flow Rate (Qt):			
	Parameter / Meter No		1001	1003
i)	Transitional flow rating of meter, I/hr		120	120
il)	Error in metering accuracy, %	(± 2 %)	-1.286	-1.777
- if		Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):		-	
S.No	Parameter / Meter No		1001	1003
i)	Minimum starting flow rating of meter,	I/hr	30	30
il)	Error in metering accuracy, %	(± 5%)	-2.642	-3.615
	OF THE PARTY OF TH	Result	Pass	Pass
5. Pre	essure Tightness Test :			100
S.No	Parameter / Meter No		1001	1003
i)	1.6 MPa for 15 minutes		Withstood	Withstood
il)	2.0 MPa for 1 minute		Withstood	Withstood
	and the second of the second	Result	Pass	Pass

B. CONSTRUCTION

Meter No. : 1002

I. Before Dismantling (CI: 7):

1). General(CI: 7.1):

When the meter has been subjected to an accidental reversal of flow,it is capable of withstanding it without any deterioration or change of their metrological properties.

Result: Satisfactory

Tested By

(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Approved By



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2). Body(CI: 7.2):

The body has free from manufacturing and processing defects. And it is not repaired by plugging, welding or by the addition of materials. Internal shape of the body has to ensure smooth flow of water and easy dismantling.

3). Registration Box(CI 7.3):

The registration box may be provided with escape hole(s) for minimizing the accumulation of water.

Result: Not applicable.

Result: Satisfactory

4). Cap(CI: 7.4):

The cap and registration box are integral, the material for cap is the same as used for registration box. The cap has so designed and fixed to the registration box as to avoid entry of water and dirt. The transparent window which covers the dial has inserted from the inside into the cap. The protective lid is secured by a robust hinge or other suitable method of robust construction. Cap ring where applicable should be of the same material as of the cap

Result: Satisfactory

CI: 7.4.1: Transparent window covering the dial should be provided with a wiper on the inner side for wiping off condensed water.

Result: Not applicable.

5). Connections(CI: 7.5):

The meter casing has been fitted with pipe line by means of two cylindrical nipples with connecting nuts. The threads on the connection has conforming to IS 2643 (Pt.1 to 3): 1975.

Result: Satisfactory

6). Strainers(CI: 7.6):

Water meters have been provided with strainers. They are rigid, easy to remove and clean and is fitted on the inlet side of the water meter. It is possible to remove and clean the strainer in such a way as not to disturb the registration box or tampering with it. The strainer has a total area of holes not less than twice the area of the nominal inlet bore of the pipe to which the meter is connected except in the case of single jet inferential type of meters. The free area of holes is such that it complies with the head loss at nominal and maximum flow rates. An external strainer is fitted on the inlet side satisfying the above requirements

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Result: Satisfactory

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7). Impeller and Piston(CI: 7.7):

CI: 7.7.1: Impeller and impeller shaft assembly has rest on a self-lubricating bearing of low

Result: Satisfactory

Impeller and Measuring Chamber(CI: 7.8):

The impeller chamber and measuring chamber has a rigid construction and withstand to internal stress.

Result: Satisfactory

9). Gears and Pinions(CI: 7.9):

Gears and pinions has constructed properly and smoothly mesh with each other and has firmly fitted on their shafts.

Result: Satisfactory

10). Bearings(CI:7.10):

Impeller bearing has suitably grounded and polished. It shape has a provision to prevent the penetration to sand and to preclude the deposit of anything in solution or suspension in water and to facilitate the washing away of such deposits by the water flow. Gear shaft has freely revolve in their bearing.

11). Counter(CI:7.11):

The counter has a combination of pointer and cyclometer type and the pointers reading is in clockwise direction. The rollers of cyclometer counter and the pointer are made of plastic and self-lubricating type.

Result: Satisfactory

12). Dial(CI: 7.12):

The dial has made of plastic and has indestructible marking with good legibility.

Result: Satisfactory

13). Regulator(CI: 7.13)

An internal regulator has been provided on the meter and it is not accessible from out side.

Result: Satisfactory

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

14). Sealing(CI:7.14):

Sealing hole has been provided and the meter has sealed properly to render it impossible to obtain access to the measuring unit including registration box and cap without breaking the seal. Sealing wire is made of rust proof material.

Result: Satisfactory

15). Frost Protection Device(CI:7.15):

Result: Not Applicable

Indicating Device(CI: 8):

- 1). CI: 8.1: The indicating device is capable of record 99999 m3
- 2). CI: 8.2: The indicator has allow by simple juxtaposition of its various constituent elements, a reliable, easy and unambiguous reading of the volume of water measured and expressed in m3. The volume is indicated by the combination of pointers on circular scales and in-line consecutive digits.
- 3). CI: 8.2.1: The m³ and its multiples have been indicated in black and sub-multiples of m3 in red. This color coding applies to the pointers on circular scale type indicating devices and to the drum in in-line digit indicating devices. The actual or apparent height of the digits on the drums is not being less than 4mm.

For digital indicators the visible displacement of all digits is upward in value. The advance of any given digital unit is completed while the digit of the immediately next lower value describes the last tenth of its travel. The drum showing the digits of lowest value may move continuously. The whole number of m3 is clearly indicated.

- 4). CI: 8.2.2: The indicators with pointer has rotates in a clock-wise direction. The value in 'kl' for each scale division are accompanied by a multiplying factor of x0.0001m3, x0.001m3, 0.01m3 and 0.1m3
- 5). CI: 8.2.3(a): The unit symbol 'm3' is mentioned in immediate vicinity of the indicator.

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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

6). CI: 8.2.3(b): The fastest-moving visible graduated element, the control element, the scale interval of which is known as "Verification Scale Interval" has been move continuously.

Result: Satisfactory

7). CI: 8.2.4: The length of verification scale interval is not less than 1mm and not more than 5mm. The scale is consist of lines of equal thickness not exceeding one quarter of the distance between the axes of two consecutive lines and differing only in length.

The width of the pointer index tip is not exceeding one quarter of the distance between two scale divisions, and it is not greater than 0.5mm.

Result: Satisfactory

8). CI: 8.3 Value of Verification Scale Division: The maximum value of verification scale interval is 0.0001m3

9). CI:8.4 Accelerating Device:

The vane provided on the pressure plate does the purpose of the accelerating device. During the testing, it is ensured that, to increasing the speed of the meter is not possible by using this device, when the flow is below Qmin.

II. After Dismantling(CI:12.4.3 & 12.4.4):

After the two meters have undergone the life test and all the type tests, one of the meters (Meter No: 1003), which has undergone greater deterioration in its performance under the flow test is dismantled completely to its component parts and examined with a view to ensuring that there is no undue wear or distortion with regard to dimensions and tolerances within specified values. Particular attention is also paid to impeller, impeller shaft, bearings, gears and pinions, pivots and gland packing. After studying all the components, all parts are reassembled. There is no difficulty and force for fitting needed during assembly.

TESTIA

Result: Satisfactory

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

	Nomenclature	Standard requirement	Meter No		
S. No			1001	1002	1003
1)	Meter Size, mm	15	15	15	15
2)	Threads	G 3/4B	G 3/4B	G 3/4B	G 3/4B
3)	Nominal flow rate, kl/hr	1.5	1.5	1.5	1.5
4)	Length of Thread on the Body(a), mm	10 (min.)	11.5	11.6	11.3
5)	Length of Thread on the Body(b), mm	12 (min.)	14.9	14.6	14.1
6)	Length (with Nipple), mm	250 (± 5.00)	248.1	248.2	247.9
7)	Length (without Nipple), mm	165 (+ 0, - 2)	164.1	163.9	163.7
8)	Width , mm	100 (max.)	98.3	98.9	98.8
9)	Height(H1), mm	50 (max.)	30.8	30.7	30.8
10)		180 (max.)	70.3	70.2	70.1
, 0)	[g(Result	Pass	Pass	Pass

D. VERIFICATION SCALE INTERVAL

: Not Applicable

E. MARKING (CI:14.1)

a). Trade Mark: Marked

b). Sl.No : Marked

c). Nom. Size : Marked

d). Class of water meter

: Marked

e). Direction of flow

: Marked

f). Year of manufacturing

: Marked

and SI. No

Result: Satisfactory

Remarks:

--- End of test report ---

Tested By

L) A

(D.Anguraj) Jr.Engineer/ Mech. Engg. Division Si Tarc

Approved By

(H.Sahul Hameed)

Engineer/ Mech. Engg. Division



MECHANICAL ENGG. DIVISION

TESTING AND RESEARCH CENTRE

RECOGNISED BY DSIR/MINISTRY OF SCIENCE & TECHNOLOGY AND BIS, ACCREDITED BY NABL IN THE FIELDS OF MECHANICAL, ELECTRICAL & CHEMICAL TESTING AND MECHANICAL & ELECTRO TECHNICAL CALIBRATION. SPONSORED BY INDUSTRIAL DEVELOPMENT BANK OF INDIA (IDBI), PROMOTED BY THE SOUTHERN INDIA ENGG. MANUFACTURERS ASSOCIATION (SIEMA) AND COIMBATORE DISTRICT SMALL SCALE INDUSTRIES ASSOCIATION (CODISSIA).

TEST REPORT NO

04 0238

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Date : 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER

Name & Address of the Customer:

V.A. Valves

Udyog Nagar, Gadaipur P.O.

Randhawa Masandan

JALANDHAR - 144 004.

Dear Customer,

We are pleased to forward the test report for the followiong sample.

Item Description

20mm Water Meter, Make: FEDREL

Sample S.No.

1004, 1005 & 1006

Received on

18.04.2014

Test Method

As per IS779:1994

Customer Ref.No./Date

ZAIPL/SITARC/2013-14,08.04.2014

Thanking you

Yours faithfully

Joint Director.



1. This report refers only to the particular sample(s) submitted for testing and the sample was not drawn by us.

2. This report shall not be reproduced except in full, unless written permission for the publication of an approved abstract has been obtained from the Director, Si'Tarc.

The results reported in this report are valid at the time of under the stated conditions of measurement.

4. Correction or attestation if any invalidate this report. This report strictly confidential & its use for publicity, arbitration or as evidence in legal disputes if forbidden.





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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

Our Code No. : 04 0238

Deviations from the Test Method

Received On

: 2014.04.18

NIL

Duration of Test : 2014.04.19 to 2014.06.18

DESCRIPTION OF THE SAMPLE :

Make

FEDREL

Size, mm

: 20

Туре Class : Multi Jet

Meter No

: 1004, 1005

& 1006

TESTING FACILITY

Magnetic Flowmeter Pressure Transmitter, P1 : PI FLOW 106

Weighing Balance Hydrostatic Pressure Tester : MI WEIG 28 PI HYPR 35

Pressure Transmitter, P2

: PI PRESS 115 : PI PRESS 116

Temperature Oven

22117101

A. PERFORMANCE TEST RESULTS

Flow Tests: (CI:10.2 & 11)

1. At Maximum Flow Rate (Qmax):

iv)	Error in metering accuracy, %	(± 2 %)	0.272	1.079	0.691
iii)	Pressure loss, MPa		0.089	0.091	0.096
ii)	Minimum discharge with pressure not exceeding 0.1MPa	The state of the s	5.090	5.076	5.069
i)	Maximum flow rating of meter, kl/h		5	5	5
S.No	Parameter / Meter No		1004	1005	1006

Tested By

(D.Anguraj)

Jr. Engineer/ Mech. Engg. Division.

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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

	Nominal Flow Rate (Qn):	0		
S.No	Parameter / Meter No	1004	1005	1006
i)	Nominal flow rating of meter, kl/hr	2.5	2.5	2.5
ii)	Minimum discharge with pressure loss	5.08/	-5 (50)	
	not exceeding 0.025 MPa, kl/hr	2.516	2.531	2.527
iii)	Pressure loss, MPa	0.023	0.024	0.022
iv)	Error in metering accuracy, % (± 2 %)	0.397	0.828	0.636
	Result	Pass	Pass	Pass
3. At	Transitional Flow Rate (Qt):		1000	
S.No	Parameter / Meter No	1004	1005	1006
i)	Transitional flow rating of meter, I/hr	200	200	200
ii)	Error in metering accuracy, % (± 2 %)	0.658	0.833	0.658
	Result	Pass	Pass	Pass
4. At	Minimum Flow Rate (Qmin):	E-131	LEL	
S.No	Parameter / Meter No	1004	1005	1006
i)	Minimum starting flow rating of meter, I/hr	50	50	50
ii)	Error in metering accuracy, % (± 5%)	2.167	2.522	2.877
	Result	Pass	Pass	Pass
5. Pre	essure Tightness Test (CI: 10.1):	I I I I I I I I I I I I I I I I I I I	0.730	
S.No	Parameter / Meter No	1004	1005	1006
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
ii)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
6. Te	mperature Suitability Test (CI: 10.3):		2.55	- 200
S.No		1004	1005	1006
i)	Temperature , 45 deg. C	Withstood	Withstood	Withstood
ii)	Duration,10 hrs	100		19-5 1
	Result	Pass	Pass	Pass

(D.Anguraj)

Jr. Engineer/ Mech. Engg. Division.

Engineer/ Mech. Engg. Division.



SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE

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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

aximum flow rating of meter, kl/hr inimum discharge with pressure loss not exceeding 0.1MPa, kl/hr ressure loss, MPa rror in metering accuracy, % (± 2 %) Result	5.087 0.096	5 5.080 0.094	5.062
not exceeding 0.1MPa, kl/hr ressure loss, MPa rror in metering accuracy, % (± 2 %)	0.096	The second second	5.062
ressure loss, MPa rror in metering accuracy, % (± 2 %)	0.096	The second second	5.062
rror in metering accuracy, % (± 2 %)		0.004	
	0.040	0.034	0.092
Regult	0.318	0.913	0.834
rtesuit	Pass	Pass	Pass
ominal Flow Rate (Qn):		TE 102	1(0-1)(
arameter / Meter No	1004	1005	1006
ominal flow rating of meter, kl/hr	2.5	2.5	2.5
linimum discharge with pressure loss			
not exceeding 0.025 MPa, kl/hr	2.524	Page American Co.	2.520
ressure loss, MPa	0.022	0.020	0.023
rror in metering accuracy, % (± 2 %)			0.732
Result	Pass	Pass	Pass
ransitional Flow Rate (Qt):			-
			1006
ransitional flow rating of meter, I/hr			200
rror in metering accuracy, % (± 2 %)	0.616		0.616
Result	Pass	Pass	Pass
inimum Flow Rate (Qmin):			
			1006
	The second second		50
			2.863
		Pass	Pass
1	5.75 at 25 a		
			1006
	0.34.35.55.55		Withstood
			Withstood
By Si Taroneer/ Mech. Engg. Division.	Pass	Pass	Pass
	ominal flow rating of meter, kl/hr inimum discharge with pressure loss not exceeding 0.025 MPa, kl/hr ressure loss, MPa rror in metering accuracy, % (± 2 %) Result ansitional Flow Rate (Qt): arameter / Meter No ransitional flow rating of meter, l/hr rror in metering accuracy, % (± 2 %) Result inimum Flow Rate (Qmin): arameter / Meter No linimum starting flow rating of meter, l/hr rror in metering accuracy, % (± 5%) Result sure Tightness Test (CI: 10.1 of IS 779:1994) arameter / Meter No 6 MPa for 15 minutes .0 MPa for 1 minute	cominal flow rating of meter, kl/hr inimum discharge with pressure loss not exceeding 0.025 MPa, kl/hr ressure loss, MPa 0.022 rror in metering accuracy, % (± 2 %) 0.434 Result Pass ansitional Flow Rate (Qt): arameter / Meter No 1004 ransitional flow rating of meter, l/hr 200 rror in metering accuracy, % (± 2 %) 0.616 Result Pass inimum Flow Rate (Qmin): arameter / Meter No 1004 linimum starting flow rating of meter, l/hr 50 rror in metering accuracy, % (± 5%) 2.203 Result Pass sure Tightness Test (CI: 10.1 of IS 779:1994): arameter / Meter No 1004 6 MPa for 15 minutes Withstood Withstood Withstood Withstood	2.5 2.5



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7. Life Test (CI:12.4.4):

Meter No :1004 & 1006

i). Discontinuous Flow:

a). Nominal flow rate

: 2.5 kl/hr c). No. of Interruptions :

100000

Test flow rate

: 2.5 kl/hr d). Duration of Pauses :

15 sec

ii). Continuous Flow:

Result: Satisfactory

a). Nominal flow rate : 2.5 kl/hr c). Period of Operation :

100 hrs

b). Test flow rate

: 5 kl/hr

Result: Satisfactory

Flow Tests(after life test):

1. At Maximum Flow Rate (Qmax):

		Result	Pass	Pass
iv)	Error in metering accuracy, %	(± 2 %)	0.301	0.913
iii)	Pressure loss, MPa		0.096	0.093
ii)	Minimum discharge with pressure not exceeding 0.1M	and the state of t	5.051	5.044
i)	Maximum flow rating of meter, kl/h		5	5
S.No	Parameter / Meter No		1004	1006

2. At Nominal Flow Rate (Qn):

	The same of the sa	Result	Pass	Pass
iv)	Error in metering accuracy, %	(± 2 %)	0.528	0.676
iii)	Pressure loss, MPa		0.021	0.023
ii)	Minimum discharge with pressure los not exceeding 0.025 M	Share Cathanana and	2.542	2.552
i)	Nominal flow rating of meter, kl/hr		2.5	2.5
S.No	Parameter / Meter No		1004	1006

Tested By

Jr.Engineer/ Mech. Engg. Division.

Approved By

Engineer/ Mech. Engg. Division.



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

S.No	Transitional Flow Rate (Qt): Parameter / Meter No	1004	1006
i)	Transitional flow rating of meter, I/hr	200	200
il)	Error in metering accuracy, % (± 2 %)	0.623	0.821
	Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):	0.00	
S.No	Parameter / Meter No	1004	1006
i)	Minimum starting flow rating of meter, I/hr	50	50
il)	Error in metering accuracy, % (± 5%)	2.577	2.907
	Result	Pass	Pass
5. Pre	ssure Tightness Test :	11347	154
S.No	Parameter / Meter No	1004	1006
i)	1.6 MPa for 15 minutes	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood
	Result	Pass	Pass
6. Ten	perature Suitability Test :	2-853	- 1949
S.No	Parameter / Meter No	1004	1006
i)	Temperature, 45 deg. C	Withstood	Withstood
il)	Duration,10 hrs	Withstood	Withstood
	Result	Pass	Pass
Flow	Tests(after temperature suitability test	:	Yankson
	Maximum Flow Rate (Qmax):	Pess	
S.No	Parameter / Meter No	1004	1006
i)	Maximum flow rating of meter, kl/hr	5	5
ii)	Minimum discharge with pressure loss		
	not exceeding 0.1MPa, kl/hr	5.044	5.047
	Pressure loss, MPa	0.092	0.094
ii)	Error in masterine account of	0.424	1.044
ii) V)	Error in metering accuracy, % (± 2 %)		
	By Result By Indian Metering accuracy, % (± 2 %) Result Si Taro Si Taro Si Taro	Pass	Pass



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

Design 1	Nominal Flow Rate (Qn):		1004	1006
S.No	Parameter / Meter No			
i)	Nominal flow rating of meter, kl/hr	Contract of	2.5	2.5
ii)	Minimum discharge with pressure I	oss	Take IN Tel	
	not exceeding 0.025	MPa, kl/hr	2.534	2.542
iii)	Pressure loss, MPa		0.022	0.021
iv)	Error in metering accuracy, %	(± 2 %)	0.697	0.747
		Result	Pass	Pass
3. At	Transitional Flow Rate (Qt):			
S.No	Parameter / Meter No		1004	1006
i)	Transitional flow rating of meter, I/	'hr	200	200
il)	Error in metering accuracy, %	(± 2 %)	0.847	1.045
	The state of the s	Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):	all-most of the		report to hotel
S.No	Parameter / Meter No	TO TAKE OF	1004	1006
i)	Minimum starting flow rating of me	eter, I/hr	50	50
il)	Error in metering accuracy, %	(± 5%)	2.863	3.193
	THE RESERVE OF CHARGE SEC.	Result	Pass	Pass
5. Pre	essure Tightness Test :			False
S.No	Parameter / Meter No		1004	1006
i)	1.6 MPa for 15 minutes	SI- Confirmation	Withstood	Withstood
il)	2.0 MPa for 1 minute		Withstood	Withstood
	StrainaesWit-7-Ki	Result	Pass	Pass

B. CONSTRUCTION

Meter No.: 1005

I. Before Dismantling (CI: 7):

1). General(CI: 7.1):

When the meter has been subjected to an accidental reversal of flow, it is capable of withstanding it without any deterioration or change of their metrological properties.

Result: Satisfactory

Tested By

Jr.Engineer/ Mech. Engg. Division.

Approved By

Engineer/ Mech. Engg. Division.



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2). Body(CI: 7.2):

The body has free from manufacturing and processing defects. And it is not repaired by plugging, welding or by the addition of materials. Internal shape of the body has to ensure smooth flow of water and easy dismantling.

3). Registration Box(CI 7.3):

The registration box may be provided with escape hole(s) for minimizing the accumulation of water.

Result: Not applicable.

Result: Satisfactory

4). Cap(CI: 7.4):

The cap and registration box are integral, the material for cap is the same as used for registration box. The cap has so designed and fixed to the registration box as to avoid entry of water and dirt. The transparent window which covers the dial has inserted from the inside into the cap. The protective lid is secured by a robust hinge or other suitable method of robust construction. Cap ring where applicable should be of the same material as of the cap

Result: Satisfactory

CI: 7.4.1: Transparent window covering the dial should be provided with a wiper on the inner side for wiping off condensed water.

Result: Not applicable.

5). Connections(CI: 7.5):

The meter casing has been fitted with pipe line by means of two cylindrical nipples with connecting nuts. The threads on the connection has conforming to IS 2643 (Pt.1 to 3): 1975.

Result: Satisfactory

6). Strainers(CI: 7.6):

Water meters have been provided with strainers. They are rigid, easy to remove and clean and is fitted on the inlet side of the water meter. It is possible to remove and clean the strainer in such a way as not to disturb the registration box or tampering with it. The strainer has a total area of holes not less than twice the area of the nominal inlet bore of the pipe to which the meter is connected except in the case of single jet inferential type of meters. The free area of holes is such that it complies with the head loss at nominal and maximum flow rates. An external strainer is fitted on the inlet side satisfying the above requirements

Tested By

(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Result: Satisfactory
Approved By

(H.Sahul Hameed)

Engineer/ Mech. Engg. Divi



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7). Impeller and Piston(CI: 7.7):

CI: 7.7.1: Impeller and impeller shaft assembly has rest on a self-lubricating bearing of low frictional resistance.

Result: Satisfactory

Impeller and Measuring Chamber(CI: 7.8):

The impeller chamber and measuring chamber has a rigid construction and withstand to internal stress.

Result: Satisfactory

9). Gears and Pinions(CI: 7.9):

Gears and pinions has constructed properly and smoothly mesh with each other and has firmly fitted on their shafts.

Result: Satisfactory

10). Bearings(CI:7.10):

Impeller bearing has suitably grounded and polished. It shape has a provision to prevent the penetration to sand and to preclude the deposit of anything in solution or suspension in water and to facilitate the washing away of such deposits by the water flow. Gear shaft has freely revolve in their bearing.

11). Counter(CI:7.11):

The counter has a combination of pointer and cyclometer type and the pointers reading is in clockwise direction. The rollers of cyclometer counter and the pointer are made of plastic and self-lubricating type.

Result: Satisfactory

12). Dial(CI: 7.12):

The dial has made of plastic and has indestructible marking with good legibility.

Result: Satisfactory

13). Regulator(CI: 7.13)

An internal regulator has been provided on the meter and it is not accessible from out side.

Result: Satisfactory

Tested By

(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Approved By

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Engineer/ Mech. Engg. Division.



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

14). Sealing(CI:7.14):

Sealing hole has been provided and the meter has sealed properly to render it impossible to obtain access to the measuring unit including registration box and cap without breaking the seal. Sealing wire is made of rust proof material.

Result: Satisfactory

15). Frost Protection Device(CI:7.15):

Result: Not Applicable

Indicating Device(CI: 8):

- 1). CI: 8.1: The indicating device is capable of record 99999 m³
- 2). CI: 8.2: The indicator has allow by simple juxtaposition of its various constituent elements, a reliable, easy and unambiguous reading of the volume of water measured and expressed in m³. The volume is indicated by the combination of pointers on circular scales and in-line consecutive digits.
- 3). CI: 8.2.1: The m³ and its multiples have been indicated in black and sub-multiples of m³ in red. This color coding applies to the pointers on circular scale type indicating devices and to the drum in in-line digit indicating devices. The actual or apparent height of the digits on the drums is not being less than 4mm.

For digital indicators the visible displacement of all digits is upward in value. The advance of any given digital unit is completed while the digit of the immediately next lower value describes the last tenth of its travel. The drum showing the digits of lowest value may move continuously. The whole number of m3 is clearly indicated.

- 4). CI: 8.2.2: The indicators with pointer has rotates in a clock-wise direction. The value in 'kl' for each scale division are accompanied by a multiplying factor of x0.0001m3, x0.001m3, 0.01m3 and 0.1m3
- 5). CI: 8.2.3(a): The unit symbol 'm3' is mentioned in immediate vicinity of the indicator.

Tested By

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Approved By

Sahul Hameed)

Engineer/ Mech. Engg. Division.



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

6). CI: 8.2.3(b): The fastest-moving visible graduated element, the control element, the scale interval of which is known as "Verification Scale Interval" has been move continuously.

Result: Satisfactory

7). CI: 8.2.4: The length of verification scale interval is not less than 1mm and not more than 5mm. The scale is consist of lines of equal thickness not exceeding one quarter of the distance between the axes of two consecutive lines and differing only in length.

The width of the pointer index tip is not exceeding one quarter of the distance between two scale divisions, and it is not greater than 0.5mm.

Result: Satisfactory

8). CI: 8.3 Value of Verification Scale Division: The maximum value of verification scale interval is 0.0001m3

Result: Satisfactory

9). CI:8.4 Accelerating Device:

The vane provided on the pressure plate does the purpose of the accelerating device. During the testing, it is ensured that, to increasing the speed of the meter is not possible by using this device, when the flow is below Qmin.

II. After Dismantling(CI:12.4.3 & 12.4.4):

After the two meters have undergone the life test and all the type tests, one of the meters (Meter No: 1006), which has undergone greater deterioration in its performance under the flow test is dismantled completely to its component parts and examined with a view to ensuring that there is no undue wear or distortion with regard to dimensions and tolerances within specified values. Particular attention is also paid to impeller, impeller shaft, bearings, gears and pinions, pivots and gland packing. After studying all the components, all parts are reassembled. There is no difficulty and force for fitting needed during assembly.

Result: Satisfactory

Tested By

Jr.Engineer/ Mech. Engg. Division

Approved By

Engineer/ Mech. Engg. Division.



SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE

Test Report No: 04 0238

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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

_	Nomenclature	Standard	KWAP	Meter No		
S. No		requirement	1004	1005	1006	
1)	Meter Size, mm	20	20	20	20	
2)	Threads	G 1B	G 1B	G 1B	G 1B	
3)	Nominal flow rate, kl/hr	2.5	2.5	2.5	2.5	
4)	Length of Thread on the Body(a), mm	12 (min.)	14.8	14.7	14.9	
5)	Length of Thread on the Body(b), mm	14 (min.)	17.4	17.5	18.1	
6)	Length (with Nipple), mm	290 (± 5.00)	288.9	288.7	288.6	
7)	Length (without Nipple), mm	190 (+ 0, - 2)	189.2	189.0	188.9	
8)	Width , mm	130 (max.)	99.6	99.3	99.8	
9)	Height(H1), mm	60 (max.)	26.3	26.4	26.4	
10)		240 (max.)	77.0	76.5	76.9	
		Result	Pass	Pass	Pass	

D. VERIFICATION SCALE INTERVAL

: Not Applicable

E. MARKING (CI:14.1)

a). Trade Mark: Marked

b). Sl.No : Marked

c). Nom. Size: Marked

d). Class of water meter

: Marked

e). Direction of flow

: Marked

f). Year of manufacturing

: Marked

and SI. No

Result: Satisfactory

Remarks:

--- End of test report ---

Tested By

(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Approved By

(H.Sahul Hameed)

Engineer/ Mech. Engg. Division



MECHANICAL ENGG. DIVISION

Sí'Tarc

SCIENTIFIC AND INDUSTRIAL TESTING AND RESEARCH CENTRE

RECOGNISED BY DSIR/MINISTRY OF SCIENCE & TECHNOLOGY AND BIS, ACCREDITED BY NABL IN THE FIELDS OF MECHANICAL, ELECTRICAL & CHEMICAL TESTING AND MECHANICAL & ELECTRO TECHNICAL CALIBRATION. SPONSORED BY INDUSTRIAL DEVELOPMENT BANK OF INDIA (IDBI), PROMOTED BY THE SOUTHERN INDIA ENGG. MANUFACTURERS ASSOCIATION (SIEMA) AND COIMBATORE DISTRICT SMALL SCALE INDUSTRIES ASSOCIATION (CODISSIA).

TEST REPORT NO

04 0236

Page 1 of 12

Date

2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER

Name & Address of the Customer:

V.A. Valves

Udyog Nagar, Gadaipur P.O

Randhawa Masandan

JALANDHAR - 144 004.

Dear Customer,

We are pleased to forward the test report for the followiong sample.

Item Description

15mm Water Meter, Make: FEDREL

Sample S.No.

14 000501, 14 000503 & 14 000504

Received on

: 18.04.2014

Test Method

As per IS779:1994

Customer Ref.No./Date

ZAIPL/SITARC/2013-14,08.04.2014

Thanking you

Yours faithfully

(K GUNABAL)

Joint Director.



NOTE

1. This report refers only to the particular sample(s) submitted for testing and the sample was not drawn by us.

2. This report shall not be reproduced except in full, unless written permission for the publication of an approved abstract has been obtained from the Director, Si'Tarc.

3. The results reported in this report are valid at the time of under the stated conditions of measurement.

4. Correction or attestation if any invalidate this report. This report strictly confidential & its use for publicity, arbitration or as evidence in legal disputes if forbidden.



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

Our Code No.

: 04 0236

Received On

: 2014.04.18

Duration of Test : 2014.04.19 to 2014.06.18

DESCRIPTION OF THE SAMPLE :

: B

Make

: FEDREL

Size, mm

Deviations from the Test Method

Type Class

: Single Jet

Meter No

: 14 000501 , 14 000503

& 14 000504

TESTING FACILITY

Magnetic Flowmeter

: PI FLOW 106

Weighing Balance

: MI WEIG 28

Pressure Transmitter, P1 : PI PRESS 115 Pressure Transmitter, P2

Hydrostatic Pressure Tester

: PI HYPR 35

: PI PRESS 116 Temperature Oven

22117101

A. PERFORMANCE TEST RESULTS

Flow Tests: (CI:10.2 & 11)

1. At Maximum Flow Rate (Qmax):

	Result	Pass	Pass	Pass
iv)	Error in metering accuracy, % (± 2 %)	0.332	-0.385	0.152
iii)	Pressure loss, MPa	0.097	0.089	0.096
****	not exceeding 0.1MPa, kl/hr	3.226	3.182	3.121
	Minimum discharge with pressure loss			
i)	Maximum flow rating of meter, kl/hr	3	3	3 4
S.No	Parameter / Meter No	14 000501	14 000503	14 000504

TESTING

Tested By

.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Approved By

Engineer/ Mech. Engg. Division.



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2. At	Nominal Flow Rate (Qn):	6		
S.No	Parameter / Meter No	14 000501	14 000503	14 000504
)	Nominal flow rating of meter, kl/hr	1.5	1.5	1.5
i)	Minimum discharge with pressure loss			
	not exceeding 0.025 MPa, kl/hr	1.544	1.555	1.613
iii)	Pressure loss, MPa	0.023	0.022	0.023
v)	Error in metering accuracy, % (± 2 %)	1.140	0.947	1.334
	Result	Pass	Pass	Pass
3. At	Transitional Flow Rate (Qt):	- United to	THE COURTS	
S.No	Parameter / Meter No	14 000501	14 000503	14 000504
i)	Transitional flow rating of meter, I/hr	120	120	120
ii)	Error in metering accuracy, % (± 2 %)	-0.793	-1.274	1.134
	Result	Pass	Pass	Pass
4. At	Minimum Flow Rate (Qmin):			
S.No	Parameter / Meter No	14 000501	14 000503	14 000504
i)	Minimum starting flow rating of meter, I/hr	30	30	30
ii)	Error in metering accuracy, % (± 5%)	1.287	-0.600	1.916
	Result	Pass	Pass	Pass
5. Pre	essure Tightness Test (CI: 10.1):			
S.No	Parameter / Meter No	14 000501	14 000503	14 000504
i)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
ii)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
6. Te	mperature Suitability Test (CI: 10.3):	4 (14)		
S.No		14 000501	14 000503	14 000504
i)	Temperature , 45 deg. C			
ii)		Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
Teste	ed By		Approved By	
F	Duration, 10 hrs Result ed By nguraj) spinoar/ Mach Enga Division	KELAN	H SW H	\$
(D.Ar	nguraj)	2	(H.Sahul Hame	
Jr.En	gineer/ Mech. Engg. Division.	*/	Engineer/ Mech	. Engg. Division





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LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

S.No	Parameter / Meter No	14 000501	14 000503	14 000504
i)	Maximum flow rating of meter, kl/hr	30	3	3
ii)	Minimum discharge with pressure loss			
	not exceeding 0.1MPa, kl/hr	3.208	3.150	3.157
iii)	Pressure loss, MPa	0.097	0.096	0.096
iv)	Error in metering accuracy, % (± 2 %)	0.386	-0.436	0.386
L.V.SI	Result	Pass	Pass	Pass
	Nominal Flow Rate (Qn):		Reference to	
S.No	Parameter / Meter No	14 000501	14 000503	14 000504
i) ii)	Nominal flow rating of meter, kl/hr Minimum discharge with pressure loss	1.5	1.5	1.5
	not exceeding 0.025 MPa, kl/hr	1.570	1.580	1.591
ii)	Pressure loss, MPa	0.020	0.022	0.023
iv)	Error in metering accuracy, % (± 2 %)	1.085	0.664	1.506
	Result	Pass	Pass	Pass
3. At	Transitional Flow Rate (Qt):			
S.No	Parameter / Meter No	14 000501	14 000503	14 000504
)	Transitional flow rating of meter, I/hr	120	120	120
il)	Error in metering accuracy, % (± 2 %)	-0.600	-1.058	1.232
	Result	Pass	Pass	Pass
	Minimum Flow Rate (Qmin):			
	Parameter / Meter No	14 000501	14 000503	14 000504
)	Minimum starting flow rating of meter, I/hr	30	30	30
i)	Error in metering accuracy, % (± 5%)	1.548	-1.381	2.525
	Result	Pass	Pass	Pass
	ssure Tightness Test (CI: 10.1 of IS 779:1994	:		
	Parameter / Meter No	14 000501	14 000503	14 000504
)	1.6 MPa for 15 minutes	Withstood	Withstood	Withstood
1)	2.0 MPa for 1 minute	Withstood	Withstood	Withstood
	Result	Pass	Pass	Pass
	guraj) Result Result Si Taro Si Taro	S RISBARCH CO	Approved By (H. Sahul Hamee Engineer/ Mech.	1'

SLFME 024/07.01/11.13

05



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LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7. Life Test (CI:12.4.4):

Meter No :14 000501 & 14 000504

i). Discontinuous Flow:

a). Nominal flow rate

: 1.5 kl/hr c). No. of Interruptions :

100000

b). Test flow rate

: 1.5 kl/hr d). Duration of Pauses :

15 sec

Result: Satisfactory

ii). Continuous Flow:

a). Nominal flow rate

: 1.5 kl/hr c). Period of Operation :

100 hrs

b). Test flow rate

: 3 kl/hr

Result: Satisfactory

Flow Tests(after life test):

1. At Maximum Flow Rate (Qmax):

		Result	Pass	Pass
iv)	Error in metering accuracy, %	(± 2 %)	0.306	0.480
iii)	Pressure loss, MPa		0.094	0.096
11)	not exceeding 0.1M		3.143	3.136
ii)	Minimum discharge with pressure			
i)	Maximum flow rating of meter, kl/h	r	3	3
S.No	Parameter / Meter No		14 000501	14 000504

2. At Nominal Flow Rate (Qn):

	The at wateries a remark have	Result	Pass	Pass
v)	Error in metering accuracy, %	(± 2 %)	1.105	1.303
iii)	Pressure loss, MPa	a 164	0.020	0.022
ii)	Minimum discharge with pressure loss not exceeding 0.025 MPa, kl/hr		1.706	1.688
i)	Nominal flow rating of meter, kl/hr		1.5	1.5
S.No	Parameter / Meter No		14 000501	14 000504

Tested By

(D.Anguraj)

Jr. Engineer/ Mech. Engg. Division.

Approved By

(H.Sahul Hamee

Engineer/ Mech. Engg. Division.



04 0236 Page : 6 of 12 Date : 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

S.No	Parameter / Meter No	14 000501	14 000504
i)	Transitional flow rating of meter, I/hr	120	120
il)	Error in metering accuracy, % (± 2 %)	-0.796	1.168
,	Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):	1.423	1.372
S.No	Parameter / Meter No	14 000501	14 000504
i)	Minimum starting flow rating of meter, I/hr	30	30
il)	Error in metering accuracy, % (± 5%)	1.703	2.662
1	Result	Pass	Pass
5. Pre	essure Tightness Test :	4.564	1.551
S.No	Parameter / Meter No	14 000501	14 000504
i)	1.6 MPa for 15 minutes	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood
	Result	Pass	Pass
6. Ter	nperature Suitability Test :	- 2048-	2.254
S.No	Parameter / Meter No	14 000501	14 000504
i)	Temperature, 45 deg. C	Withstood	Withstood
il)	Duration,10 hrs	14 (Kinder)	14 (E) (E) (E)
	Result	Pass	Pass
		1.	
Flow	/ Tests(after temperature suitability test	1.	
		<u> -</u>	
	Maximum Flow Rate (Qmax): Parameter / Meter No	14 000501	14 000504
1. At	Maximum Flow Rate (Qmax): Parameter / Meter No	Fign	14 000504
1. At S.No	Maximum Flow Rate (Qmax):	14 000501	
1. At S.No	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr	14 000501	
1. At S.No	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss	14 000501	3
1. At S.No i) ii)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss not exceeding 0.1MPa, kl/hr Pressure loss, MPa	14 000501 3 3.128 0.096	3.143
1. At S.No i) ii)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss not exceeding 0.1MPa, kl/hr Pressure loss, MPa	14 000501 3 3.128 0.096	3 3.143 0.098
1. At S.No i) ii)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss not exceeding 0.1MPa, kl/hr Pressure loss, MPa	14 000501 3 3.128 0.096	3 3.143 0.098 0.553
1. At S.No i) ii) iii) iv)	Maximum Flow Rate (Qmax): Parameter / Meter No Maximum flow rating of meter, kl/hr Minimum discharge with pressure loss not exceeding 0.1MPa, kl/hr Pressure loss, MPa Error in metering accuracy, % (± 2 %) Result	14 000501 3 3.128 0.096	3 3.143 0.098 0.553 Pass

E-Mail Address : sitarcinfo@sitarc.com



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER

Tested as per IS 779:1994

	Nominal Flow Rate (Qn):	14.000501	14 000504
S.No	Parameter / Meter No	14 000501	
i)	Nominal flow rating of meter, kl/hr	1.5	1.5
ii)	Minimum discharge with pressure loss	First Allen Sa	
	not exceeding 0.025 MPa, kl/hr	1.717	1.696
iii)	Pressure loss, MPa	0.021	0.022
iv)	Error in metering accuracy, % (± 2 %)	1.173	1.372
	Result	Pass	Pass
3. At	Transitional Flow Rate (Qt):		
S.No	Parameter / Meter No	14 000501	14 000504
i)	Transitional flow rating of meter, I/hr	120	120
il)	Error in metering accuracy, % (± 2 %)	-0.896	1.581
	Result	Pass	Pass
4. At	Minimum Flow Rate (Qmin):		
S.No	Parameter / Meter No	14 000501	14 000504
i)	Minimum starting flow rating of meter, I/hr	30	30
il)	Error in metering accuracy, % (± 5%)	2.002	2.964
	Result	Pass	Pass
5. Pre	essure Tightness Test :		heid
S.No	Parameter / Meter No	14 000501	14 000504
i)	1.6 MPa for 15 minutes	Withstood	Withstood
il)	2.0 MPa for 1 minute	Withstood	Withstood
	Result	Pass	Pass

B. CONSTRUCTION

Meter No. : 14 000503

I. Before Dismantling (CI: 7):

1). General(CI: 7.1):

When the meter has been subjected to an accidental reversal of flow, it is capable of withstanding it without any deterioration or change of their metrological properties.

Result: Satisfactory

Tested By

Jr.Engineer/ Mech. Engg. Division.

Approved By

Engineer/ Mech. Engg. Division.



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

2). Body(CI: 7.2):

The body has free from manufacturing and processing defects. And it is not repaired by plugging, welding or by the addition of materials. Internal shape of the body has to ensure smooth flow of water and easy dismantling.

3). Registration Box(CI 7.3):

The registration box may be provided with escape hole(s) for minimizing the accumulation of water.

Result: Not applicable.

Result: Satisfactory

4). Cap(CI: 7.4):

The cap and registration box are integral, the material for cap is the same as used for registration box. The cap has so designed and fixed to the registration box as to avoid entry of water and dirt. The transparent window which covers the dial has inserted from the inside into the cap. The protective lid is secured by a robust hinge or other suitable method of robust construction. Cap ring where applicable should be of the same material as of the cap

Result: Satisfactory

CI: 7.4.1: Transparent window covering the dial should be provided with a wiper on the inner side for wiping off condensed water.

Result: Not applicable.

5). Connections(CI: 7.5):

The meter casing has been fitted with pipe line by means of two cylindrical nipples with connecting nuts. The threads on the connection has conforming to IS 2643 (Pt.1 to 3): 1975.

Result: Satisfactory

6). Strainers(CI: 7.6):

Water meters have been provided with strainers. They are rigid, easy to remove and clean and is fitted on the inlet side of the water meter. It is possible to remove and clean the strainer in such a way as not to disturb the registration box or tampering with it. The strainer has a total area of holes not less than twice the area of the nominal inlet bore of the pipe to which the meter is connected except in the case of single jet inferential type of meters. The free area of holes is such that it complies with the head loss at nominal and maximum flow rates. An external strainer is fitted on the inlet side satisfying the above requirements

Result: Satisfactory

Tested By

(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Starc RS Tarc

Approved By

(H.Sahul Hameed)

Engineer/ Mech. Engg. Division.



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Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

7). Impeller and Piston(CI: 7.7):

CI: 7.7.1: Impeller and impeller shaft assembly has rest on a self-lubricating bearing of low frictional resistance.

Result: Satisfactory

8). Impeller and Measuring Chamber(CI: 7.8):

The impeller chamber and measuring chamber has a rigid construction and withstand to internal stress.

Result: Satisfactory

9). Gears and Pinions(CI: 7.9):

Gears and pinions has constructed properly and smoothly mesh with each other and has firmly fitted on their shafts.

Result: Satisfactory

10). Bearings(CI:7.10):

Impeller bearing has suitably grounded and polished. It shape has a provision to prevent the penetration to sand and to preclude the deposit of anything in solution or suspension in water and to facilitate the washing away of such deposits by the water flow. Gear shaft has freely revolve in their bearing.

11). Counter(CI:7.11):

The counter has a combination of pointer and cyclometer type and the pointers reading is in clockwise direction. The rollers of cyclometer counter and the pointer are made of plastic and self-lubricating type.

Result: Satisfactory

12). Dial(CI: 7.12):

The dial has made of plastic and has indestructible marking with good legibility.

Result: Satisfactory

13). Regulator(CI: 7.13)

An internal regulator has been provided on the meter and it is not accessible from out side.

Result: Satisfactory

Tested By

(D.Anguraj)

Jr.Engineer/ Mech. Engg. Division.

Approved By

H.Sahul Hameed)

Engineer/ Mech. Engg. Division.



Page: 10 of 12

Date: 2014.06.27

LIFE TEST REPORT OF DOMESTIC WATER METER Tested as per IS 779:1994

14). Sealing(CI:7.14):

Sealing hole has been provided and the meter has sealed properly to render it impossible to obtain access to the measuring unit including registration box and cap without breaking the seal. Sealing wire is made of rust proof material.

Result: Satisfactory

15). Frost Protection Device(CI:7.15):

Result: Not Applicable

Indicating Device(CI: 8):

- 1). CI: 8.1: The indicating device is capable of record 99999 m3
- 2). CI: 8.2: The indicator has allow by simple juxtaposition of its various constituent elements, a reliable easy and unambiguous reading of the volume of water measured and expressed in m3. The volume is indicated by the combination of pointers on circular scales and in-line consecutive digits.
- 3). CI: 8.2.1: The m³ and its multiples have been indicated in black and sub-multiples of m3 in red. This color coding applies to the pointers on circular scale type indicating devices and to the drum in in-line digit indicating devices. The actual or apparent height of the digits on the drums is not being less than 4mm.

For digital indicators the visible displacement of all digits is upward in value. The advance of any given digital unit is completed while the digit of the immediately next lower value describes the last tenth of its travel. The drum showing the digits of lowest value may move continuously. The whole number of m3 is clearly indicated.

- 4). CI: 8.2.2: The indicators with pointer has rotates in a clock-wise direction. The value in 'kl' for each scale division are accompanied by a multiplying factor of x0.0001m3, x0.001m3, 0.01m3 and 0.1m3
- 5). CI: 8.2.3(a): The unit symbol 'm3' is mentioned in immediate vicinity of the indicator.

Tested By

(D.Anguraj)

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TESTING

Approved By

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6). CI: 8.2.3(b): The fastest-moving visible graduated element, the control element, the scale interval of which is known as "Verification Scale Interval" has been move continuously.

Result: Satisfactory

7). CI: 8.2.4: The length of verification scale interval is not less than 1mm and not more than 5mm. The scale is consist of lines of equal thickness not exceeding one quarter of the distance between the axes of two consecutive lines and differing only in length.

The width of the pointer index tip is not exceeding one quarter of the distance between two scale divisions, and it is not greater than 0.5mm.

Result: Satisfactory

8). CI: 8.3 Value of Verification Scale Division: The maximum value of verification scale interval is 0.0001m3.

9). CI:8.4 Accelerating Device:

The vane provided on the pressure plate does the purpose of the accelerating device. During the testing, it is ensured that, to increasing the speed of the meter is not possible by using this device, when the flow is below Qmin.

II. After Dismantling(CI:12.4.3 & 12.4.4):

After the two meters have undergone the life test and all the type tests, one of the meters (Meter No: 14 000504), which has undergone greater deterioration in its performance under the flow test is dismantled completely to its component parts and examined with a view to ensuring that there is no undue wear or distortion with regard to dimensions and tolerances within specified values. Particular attention is also paid to impeller, impeller shaft, bearings, gears and pinions, pivots and gland packing. After studying all the components, all parts are reassembled. There is no difficulty and force for fitting needed during assembly.

Result: Satisfactory

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	Nomenclature	Standard requirement	Meter No		
S. No			14 000501	14 000503	14 000504
1)	Meter Size, mm	15	15	15	15
2)	Threads	G 3/4B	G 3/4B	G 3/4B	G 3/4B
3)	Nominal flow rate, kl/hr	1.5	1.5	1.5	1.5
4)	Length of Thread on the Body(a), mm	10 (min.)	11.6	11.6	11.7
5)	Length of Thread on the Body(b), mm	12 (min.)	12.6	12.5	12.6
3)	Length (with Nipple), mm	250 (± 5.00)	248.2	248.4	248.9
7)	Length (without Nipple), mm	110 (+ 0, - 2)	109.2	109.7	109.8
3)	Width , mm	100 (max.)	74.4	74.2	74.9
9)	Height(H1), mm	50 (max.)	16.8	16.8	16.7
0)	Height(H2), mm	180 (max.)	65.5	65.6	65.5
H	Maria de la companiona de	Result	Pass	Pass	Pass
٥.	VERIFICATION SCALE INTER	VAL		Not Applicable)
Ε.	MARKING (CI :14.1)				
a).	Trade Mark: Marked	d). Class of water meter		: Marked	
0).	SI.No : Marked	e). Direction of flow		: Marked	
c).	Nom. Size: Marked	f).	Year of manufacturing : Marked and SI. No		

and SI. No

Result: Satisfactory

Remarks:

--- End of test report ---

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Si Tarc Range

Approved By

H.Sahul Hameed

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