

Test Report

Test

Title : Testing of Sanitary Tapware

Method : BS EN 1286: 1999; BS EN 1982: 2008 & BS EN 1057: 2006

Report No. : _____
Completion : _____

Applicant (Information below provided by client)

Name : _____

Address : _____

Sample (Information below provided by client)

Brand : _____

Model : _____

Body marking : _____

Manufacturer : _____

Origin : _____

Description : 3/8" single lever sink mixer supplied with 1 no of _____ plastic fabric hose
(tested by _____)

Approved Signatory

Signature : _____
Name (title) : _____
Date : _____

Summary

Test	Remark
1 Dimensions	C
2.1 Leaktightness of the obturator and of the tap upstream of the obturator(s)	C
2.2 Leaktightness of the obturator: cross flow between hot water and cold water	C
2.3 Leaktightness of the tap downstream of the obturator(s)	C
3 Determination of flow rate	N
4.1 Chemical composition of metal component - Body	C
4.2 Chemical composition of metal component - Copper Tube	C
5.1 Metal extraction from Valve Cartridge (no adverse physical effect on or hazard to human beings)	C
5.2 Metal extraction from Pull-out Spray (no adverse physical effect on or hazard to human beings)	C
Note : The Spout internal water passage does not contact with water. The plastic hose connects the valve cartridge and water outlet directly.	

Results (apply only to samples tested)

1 Dimensions

BS EN 1286:1999 Cl. 8

ID	Variable	Unit	Measured	Required	Remark
1	Nominal size	in	%	%	C
	Vertical distance from lowest point of the outlet orifice to the mounting surface	mm	186.0	≥ 25	C
Overall result					C

2.1 Leaktightness of the obturator and of the tap upstream of the obturator(s)

BS EN 1286:1999 Cl. 9.3

ID	Variable	Unit	Measured	Required	Remark
1	Static pressure	bar	16	16 ± 0.5	C
	Duration	s	60	60 ± 5	C
	Leakage	---	No	No	C
Overall result					C

2.2 Leaktightness of the obturator: cross flow between hot water and cold water

BS EN 1286:1999 Cl. 9.4

ID	Variable	Unit	Measured	Required	Remark
Hot to cold	Static pressure	bar	4	4 ± 0.2	C
	Duration	s	60	60 ± 5	C
	Leakage or seepage	---	No	No	C
Cold to hot	Static pressure	bar	4	4 ± 0.2	C
	Duration	s	60	60 ± 5	C
	Leakage or seepage	---	No	No	C
Overall result					C

2.3 Leaktightness of the tap downstream of the obturator(s)

BS EN 1286:1999 Cl. 9.5

ID	Variable	Unit	Measured	Required	Remark
High pressure	Static pressure	bar	4	4 ± 0.2	C
	Duration	s	60	60 ± 5	C
	Leakage or seepage	---	No	No	C
Low pressure	Static pressure	bar	0.2	0.2 ± 0.02	C
	Duration	s	60	60 ± 5	C
	Leakage or seepage	---	No	No	C
Overall result					C

3 Determination of flow rate

BS EN 1286:1999 Cl. 10.5

ID	Variable	Unit	Measured	Required	Remark
1	Temperature	°C	Full cold	N	N
	Dynamic pressure	bar	0.1	0.1 ± 0.005	C
	Flow rate (main outlet mode)	l/s	0.032	N	N
2	Temperature	°C	34	N	N
	Dynamic pressure	bar	0.1	0.1 ± 0.005	C
	Flow rate (main outlet mode)	l/s	0.036	N	N
3	Temperature	°C	38	N	N
	Dynamic pressure	bar	0.1	0.1 ± 0.005	C
	Flow rate (main outlet mode)	l/s	0.039	N	N
4	Temperature	°C	42	N	N
	Dynamic pressure	bar	0.1	0.1 ± 0.005	C
	Flow rate (main outlet mode)	l/s	0.043	N	N
5	Temperature	°C	Full hot	N	N
	Dynamic pressure	bar	0.1	0.1 ± 0.005	C
	Flow rate (main outlet mode)	l/s	0.032	N	N
Overall result					N

Note:

- WSD has waived the minimum flow rate requirement per WSD Circular Letter No. 1/2010.

4.1 Chemical composition of metal component - Body

Designation: BS EN 1982:2008: CC754S

ID	Variable	Unit	Measured	Required	Remark
Body	Copper	%	58.1	58.0 - 63.0	C
	Zinc	%	39.6	R	C
	Lead	%	2.1	0.5 - 2.5	C
	Tin	%	<0.025	max. 1.0	C
	Nickel	%	0.1	max. 1.0	C
	Iron	%	0.1	max. 0.7	C
	Aluminium	%	<0.005	max. 0.8	C
	Manganese	%	<0.015	max. 0.5	C
	Phosphorus	%	<0.007	max. 0.02	C
	Silicon	%	<0.025	max. 0.05	C
Overall result					C

4.2 Chemical composition of metal component - Copper Tube

Designation: BS EN 1057:2006 + A1:2010: CW024A

ID	Variable	Unit	Measured	Required	Remark
Copper Tube	Copper + Silver	%	99.97 ✓	> 99.90	C
	Phosphorus	%	0.023 ✓	0.015-0.040	C
Overall result					C

5.1 Metal extraction from Valve Cartridge (no adverse physical effect on or hazard to human beings)

In-house method

ID	Variable	Unit	Measured	Required	Remark
Valve Cartridge	Arsenic	µg/l	< 1.5 ✓	≤ 10	C
	Lead	µg/l	< 2 ✓	≤ 10	C
	Cadmium	µg/l	< 1 ✓	≤ 3	C
	Chromium	µg/l	< 2 ✓	≤ 50	C
	Selenium	µg/l	< 2 ✓	≤ 40	C
	Nickel	µg/l	< 2 ✓	≤ 70	C
Overall result					C

5.2 Metal extraction from Pull-out Spray (no adverse physical effect on or hazard to human beings)

In-house method

ID	Variable	Unit	Measured	Required	Remark
Pull-out Spray	Arsenic	µg/l	< 1.5 ✓	≤ 10	C
	Lead	µg/l	< 2 ✓	≤ 10	C
	Cadmium	µg/l	< 1 ✓	≤ 3	C
	Chromium	µg/l	< 2 ✓	≤ 50	C
	Selenium	µg/l	< 2 ✓	≤ 40	C
	Nickel	µg/l	< 2 ✓	≤ 70	C
Overall result					C

Notes:

- Metals are extracted by immersing the component in boiling deionized water for five minutes.
- Requirements are based on WHO Guidelines for Drinking Water Quality Fourth Edition: 2011.

Remark :

- No electroplating materials were observed on the internal water passage surfaces of the sample under a non-destructive and unaided visual inspection.

Figure 1 - Sample

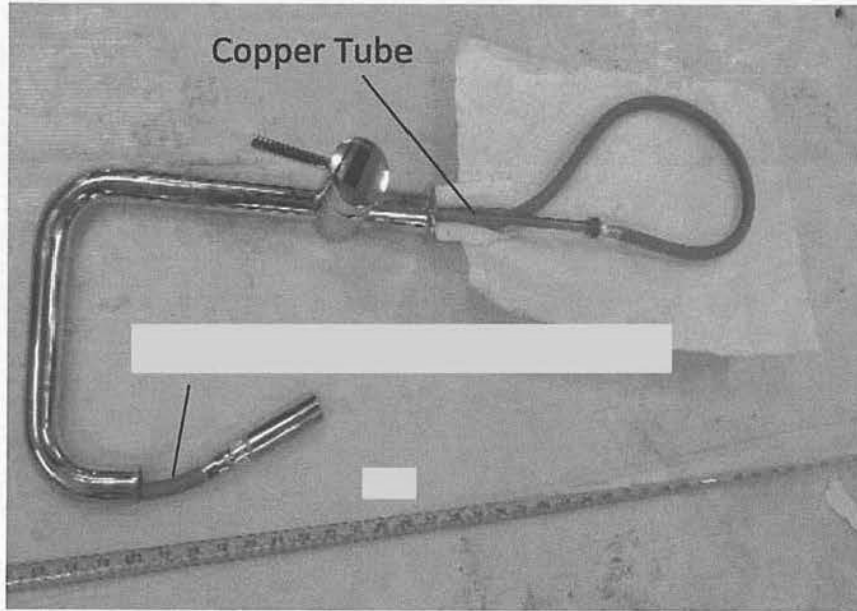


Figure 2 - Seat bore

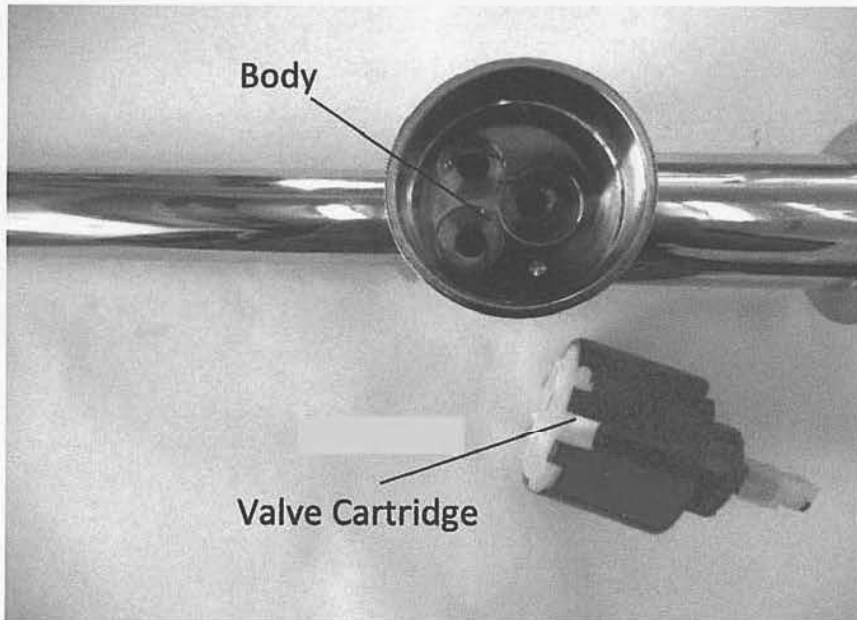


Figure 3 - Surface of internal water passage

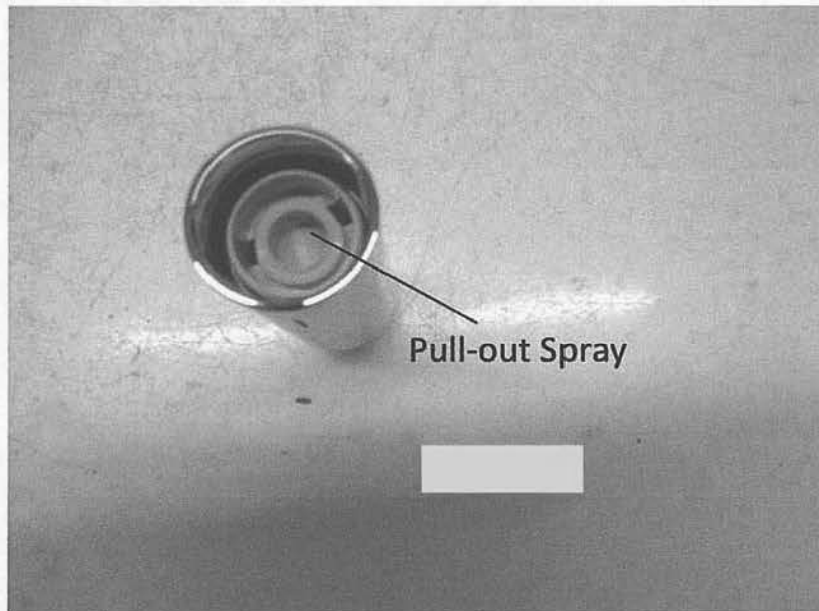
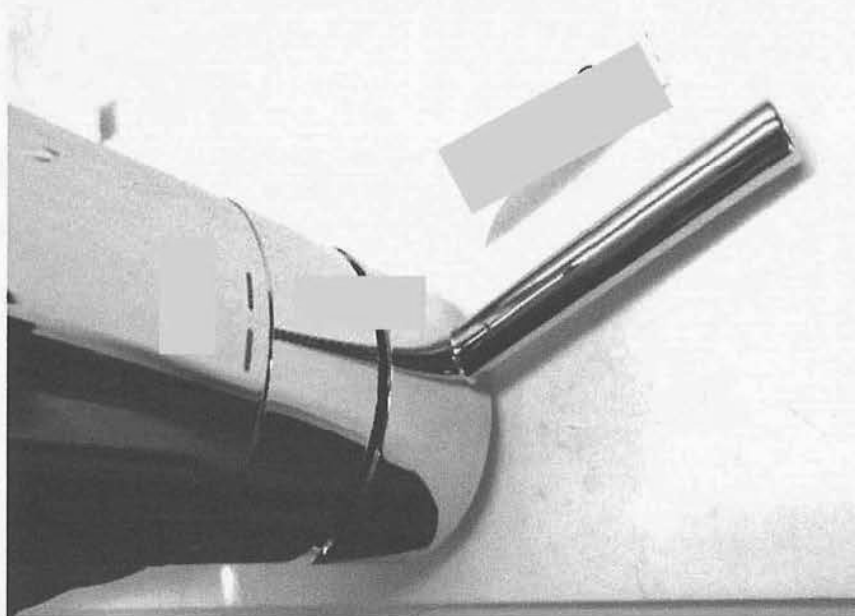


Figure 4 - Body marking



General Note(s)

Definitions:

C - conformance

N - no requirement

NC - non-conformance

R - remainder

Organizations:

HKAS - Hong Kong Accreditation Service

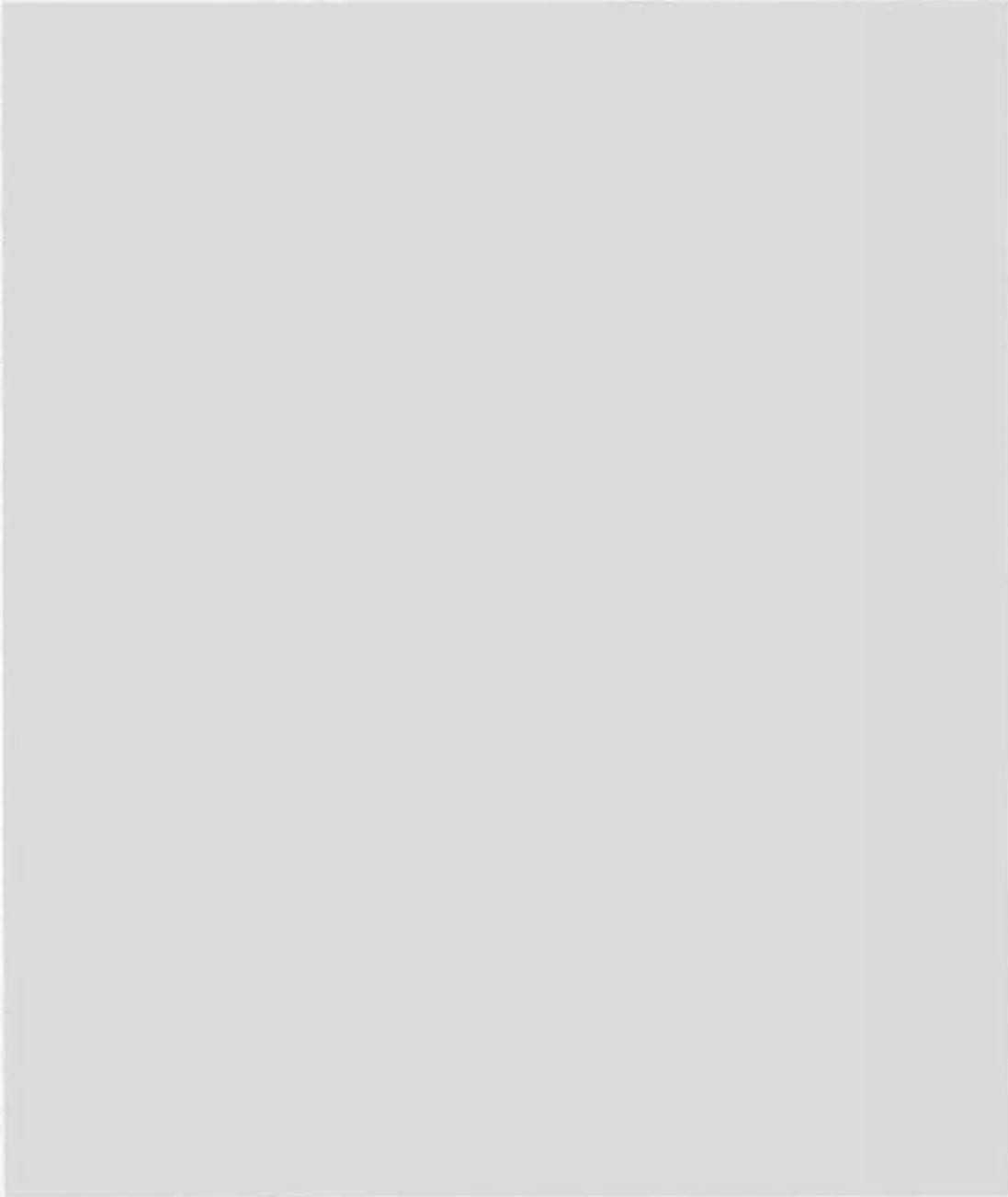
HOKLAS - Hong Kong Laboratory Accreditation Scheme

WSD - Water Supplies Department (of Hong Kong)

WHO - World Health Organization

- End of report -

Appendix A



TITLE : Testing of Suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water

REFERENCE NO. : [REDACTED]

SAMPLE DESCRIPTION : [REDACTED]

SAMPLE SUBMITTED BY : [REDACTED]

MANUFACTURER : [REDACTED]

BRAND : [REDACTED]

BODY MARKING : [REDACTED]

COUNTRY OF ORIGIN : [REDACTED]

MODEL : [REDACTED]

METHOD OF TESTS : BS 6920-1: 2014 Suitability of non-metallic materials and products for use in contact with water intended for human consumption with regard to their effect on the quality of the water Part 1: Specification
 BS 6920-2.2.1: 2000 + A3: 2014 Odour and Flavour of Water
 BS 6920-2.3: 2000 + A1: 2014 Appearance of Water
 BS 6920-2.4: 2000 + A1: 2014 Growth of Aquatic Micro-Organisms Test
 BS 6920-2.5: 2000 + A2: 2014 The extraction of substance that may be of concern to public health
 BS 6920-2.6: 2000 + A2: 2014 Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water – The extraction of metals
 BS 6920-3: 2000 High temperature tests

PERIOD OF TESTS : [REDACTED]

RESULTS: (apply only to the sample tested)

1. ODOUR AND FLAVOR OF WATER (BS 6920-1: 2014; BS 6920-2.2.1: 2000 + A3: 2014 & BS 6920-3: 2000)

Extraction temperature: 23 °C
 Surface area of the sample: 15000mm²
 Chlorine free test water

Extraction	Odour description	Flavour description
First	No	No
Final	/	/

Chlorinated test water

Extraction	Odour description	Flavour description
First	No	No
Final	/	/

Remark: Pass

Extraction temperature: 85 °C

Surface area of the sample: 15000mm²

Chlorine free test water

Extraction	Odour description	Flavour description
First	Yes (Plastic)	/
Final	No	No

Chlorinated test water

Extraction	Odour description	Flavour description
First	Yes	/
Final	No	No

Remark: Pass

2. APPEARANCE OF WATER (BS 6920-1: 2014; BS 6920-2.3: 2000 + A1: 2014 & BS 6920-3: 2000)

Extraction temperature: 23 °C

Surface area of the sample: 15000mm²

Extraction	Color (CU)	Turbidity (FNU)
First	< 5	< 0.5
Requirement	≤ 5	≤ 0.5

Remark: Pass

Extraction temperature: 85 °C

Surface area of the sample: 15000mm²

Extraction	Color (CU)	Turbidity (FNU)
First	< 5	< 0.5
Requirement	≤ 5	≤ 0.5

Remark: Pass

3. GROWTH OF AQUATIC MICROORGANISMS (BS 6920-1: 2014; BS 6920-2.4: 2000 + A1: 2014)

Incubation temperature: 30°C

Surface area of the sample: 15000mm²

Test sample requirement

MDOD on first sample, weeks 5 to 7				
Range mg/l	0 to <1.7	≥1.7 to <2.0	>2.0 to ≤2.9	>2.9
Action	Pass	Extend test by a further two weeks	Re-test with 2 further samples	Fail

Re-test with 2 further samples, MDOD of weeks 5-7		
Retest range mg/l	<2.4	≥2.4
Action	Pass	Fail

Result

Batch1

	Mean dissolved oxygen difference, MDOD (mg/L)	Requirement
Test water control	Mean = 8.5± 2.5	Mean = 8.5± 2.5
Glass (Negative reference)	0.1	MDOD = 0.0± 0.6
Paraffin wax (Positive reference)	7.0	MDOD = 7.5±2.5
Test sample	0.0	<1.69

Remark: Pass

Note: The mean dissolved oxygen concentration of the control was 7.5 mg/L.

4. THE EXTRACTION OF SUBSTANCES THAT MAY BE OF CONCERN TO PUBLIC HEALTH (BS 6920-1: 2014; BS 6920-2.5: 2000 + A2: 2014 & BS 6920-3: 2000)

Extraction temperature: 23 °C

Surface area of the sample: 15000mm²

	Cell Morphology	Remark
Test sample	Normal, non-cytotoxic	Pass
Blank	Normal, non-cytotoxic	Pass

Extraction temperature: 85 °C
 Surface area of the sample: 15000mm²

	Cell Morphology	Remark
Test sample	Normal, non-cytotoxic	Pass
Blank	Normal, non-cytotoxic	Pass

Remark: Pass

5. Suitability of non-metallic products or use in contact with water intended for human consumption with regard to their effect on the quality of the water – The extraction of metals (BS 6920-1: 2014; BS 6920-2.6: 2000 + A2: 2014 & BS 6920-3: 2000)

Extraction temperature: 23 °C
 First Extraction = Final Extraction

Metal	Max limit (ug/L)	Sample 1 Final extraction (ug/L)	Sample 2 Final extraction (ug/L)
Aluminium	200	<20	<20
Antimony	5	<0.50	<0.50
Arsenic	10	<1.0	<1.0
Boron	1000	<100	<100
Cadmium	5	<0.50	<0.50
Chromium	50	<5.0	<5.0
Iron	200	<20	<20
Lead	10	<1.0	<1.0
Manganese	50	<5.0	<5.0
Mercury	1	<0.10	<0.10
Nickel	20	<2.0	<2.0
Selenium	10	<1.0	<1.0

Remark: Pass

Extraction temperature: 85 °C
First Extraction = Final Extraction

Metal	Max limit (ug/L)	Sample 1 Final extraction (ug/L)	Sample 2 Final extraction (ug/L)
Aluminium	200	39	42
Antimony	5	<0.50	<0.50
Arsenic	10	<1.0	<1.0
Boron	1000	<100	<100
Cadmium	5	<0.50	<0.50
Chromium	50	<5.0	<5.0
Iron	200	<20	<20
Lead	10	2.9	3.2
Manganese	50	<5.0	<5.0
Mercury	1	<0.10	0.15
Nickel	20	<2.0	<2.0
Selenium	10	<1.0	<1.0

Remark: Pass

7. SUMMARY OF RESULTS

Compliance with BS 6920-1: 2014 (Cold water) requirement

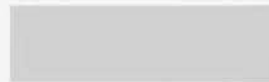
Odour and flavour of water	-	Pass
Appearance of water	-	Pass
Growth of aquatic microorganisms	-	Pass
The extraction of substances that may concern to public health	-	Pass
The extraction of metals from water	-	Pass

Compliance with BS 6920-1: 2014 (Hot water) requirement

Odour and flavour of water	-	Pass
Appearance of water	-	Pass
Growth of aquatic microorganisms	-	Pass
The extraction of substances that may concern to public health	-	Pass
The extraction of metals from water	-	Pass

Date: _____

Authorized signature: _____



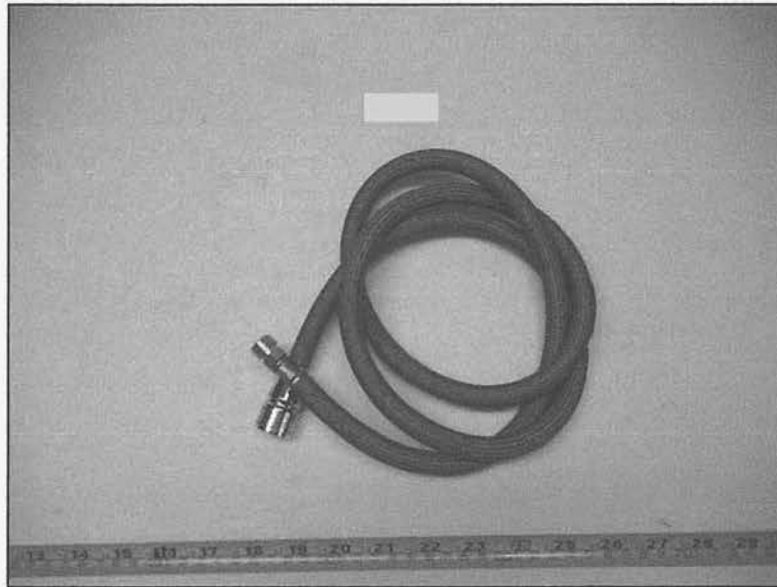


Figure 1 – Rubber Hose