



PROJECT		REF		REV	ITEM CODE	
LOCATION		DATE			PAGE	

SANITARY WARE SPECIFICATION SHEET

<p>Item Descriptions</p> <p>Outlet</p> <p>Dimensions</p> <p>Model</p> <p>Material / Color</p> <p>Manufacturer</p> <p>Source</p> <p>Contact Tel/Fax</p> <p>E-mail</p> <p>Website</p>	<p>American Standard (Thailand) "Tonic New Wave" Close-coupled watercloset with universal trap; ComfortClean Technology against stain, bacteria and germs; tested on BS 3402:1969 & BS EN 997:2012 + A1:2015; test report J26116 & J24387A; nominated flow rate 3.1/4.8 LPF in WELS Grade 1; Registration No. WC 20-0045</p> <p>H.O. Trapway, 190 mm Bottom outlet, 305 mm</p> <p>L689 x W400 x H810 mm</p> <p>TF2102</p> <p>Vitreous China / White</p> <p>American Standard (Thailand)</p> <p>Acme Sanitary Ware Co. Ltd Mr. Eric Wong/ Mr. Don Yuen</p> <p>(852) 2388-7171 / (852) 2710-8012 acme@acmesanitary.com.hk www.acmesanitary.com.hk</p>	<p align="center">Illustration/ Drawing</p>
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Note: The model TF2102 is equivalent to 2012HK-WT-0

* All information of the above is for the reference only. No prior notice is made if any changes.



ComfortClean

Effectively kills E.Coli bacteria according to tests done with the Industrial Microbiological Service Ltd (IMSL).



COMFORTCLEAN

Effectively kills E. Coli bacteria according to tests done with IMSL.

ComfortClean Antibacterial Glaze

China Glaze

Ceramic Ware

ComfortClean Antibacterial Technology

Long-lasting Protection Against Bacteria and Germs.

American Standard ComfortClean technology: A revolutionary ceramic glaze with zinc oxide that effectively kills E. coli bacteria inside the toilet bowl for the long term and beyond, as proven in tests conducted by Industrial Microbiological Services Limited (IMSL).



ComfortClean Antibacterial Glaze is fired into the ceramic at more than 1000°C, ensuring long-lasting effectiveness.

LIXIL

Link to Good Living

About LIXIL

LIXIL is the most comprehensive and connected global company in the housing and building industry, delivering human-centric innovation that enhances people's living spaces – we call this Living Technology.

Delivering core strengths in water, housing, building and kitchen technologies, our brand portfolio businesses including LIXIL, INAX, GROHE, American Standard Brands and Permasteelisa are leaders in the industries and regions in which they operate, bringing better living solutions to the world today and for future generations.





自願參與用水效益標籤計劃 - 水廁
Voluntary Water Efficiency Labelling Scheme - Water Closets




茲證明
This is to certify that

(TF2102=2102HK-WT-0)

將下列水廁在本計劃內註冊：
has registered the following water closet under this scheme :

牌子 / Brand	:	American Standard
型號 / Model	:	2102HK-WT-0 + PC-A2412
種類 / Category	:	Close-coupled Suite
原產地 / Country or Region Origin	:	Thailand (WC Pan and Cistern) China (Flushing Valve)

在用水效益標籤上展示的標誌 <i>Symbolic Presentation on the Water Efficiency Label</i>	:	 滴水點 <i>Water droplet(s)</i>
用水效益級別 <i>Water Efficiency Grade</i>	:	1
全沖水量 <i>Water Flush Volume (Full)</i>	:	4.8 公升/沖廁 <i>litres/flush</i>
低沖水量 <i>Water Flush Volume (Reduced)</i>	:	3.1 公升/沖廁 <i>litres/flush</i>

簽發日期:
Date of Issue: 9 June 2020

 水務署
Water Supplies Department



水務署署長(張業駒代行)
for Director of Water Supplies

+ 上述水廁具額外節水功能，即：重用洗盥水作沖廁用途。
The above water closet is equipped with additional water saving feature, that is: re-use the water collected from wash basin for flushing purpose.



Acme Sanitary Ware Co. Ltd.

1/F, Acme Building, 22-28 Nanking Street, Kowloon, Hong Kong

Tel: 2388 7171 Fax: 2710 8012

Email: acme@acmesanitary.com.hk

Website: www.acmesanitary.com.hk

PROJECT		REF		REV	ITEM CODE	
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SANITARY WARE SPECIFICATION SHEET

<p>Item Descriptions</p> <p>Model</p> <p>Material</p> <p>Manufacturer</p> <p>Supplier</p> <p>Contact Tel/Fax</p> <p>E-mail</p> <p>Website</p>	<p>American Standard (PRC) 5/8" Plastic float operated inlet valve</p> <p>PC-A1250</p> <p>Plastic</p> <p>American Standard (PRC)</p> <p>Acme Sanitary Ware Co. Ltd Mr. Eric Wong/ Mr. Don Yuen</p> <p>(852) 2388-7171 / (852) 2710-8012</p> <p>acme@acmesanitary.com.hk</p> <p>www.acmesanitary.com.hk</p>	<p>Illustration/ Drawing</p> <div style="text-align: center;"> </div> <div style="text-align: center; margin-top: 20px;"> </div>
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Note: The color of the above fittings may be varied without further notice.

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水務署
Water Supplies Department

總部 Headquarters



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ation Tower, 7 Gloucester Road, Wan Chai, Hong Kong

本署
Our ref. 3321/2022 T/J(1114/2022)
來函檔號
Your ref.

電話
Tel. :
傳真
Fax. : 2824 0578



4 January 2023



Approval of "AMERICAN STANDARD" Float Operated Valve (General Acceptance No. C20230001F)

Your letters ref. WRC/2778 and C-WSD/0976 dated 23 September 2022 and 29 November 2022 respectively refer.

Having considered the test report ref. J27710 issued on 28 April 2022 by Nutek Systems (HK) Limited, this Authority accepts that the fitting described below complies with, and its use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

Name of Manufacturer: Xiamen R&T Plumbing Technology Co Ltd

Country of Origin: the Mainland of China

Brand: American Standard

Details of Fitting: 5/8" Plastic float operated valve

Model: PC-A1250

Body Markings: Nil

Expiry Date: 20 April 2027



Proviso: As the fitting has not been tested for use in contact with water intended for human consumption, the fitting can only be used in flushing water plumbing systems.

This Authority hereby permits the use of the above fitting in flushing water plumbing systems subject to full adherence to Waterworks installation requirements. In particular, you are required to draw your customers' attention to the following requirement-

"The flushing volume of the flushing valve should be adjusted to suit the design of the toilet bowl so that wastes can be cleared effectively by a single flush."

"The fitting should be used within the range of working pressures specified by the manufacturer." AND

"The installed fitting should not result in backflow of water that will contaminate the flushing water supply."

A condition of this acceptance is that the fitting to be installed shall be replicas of the sample as certified by the testing agent mentioned above and without modifications. This acceptance may be withdrawn at any time if the standard of the fitting installed fails to meet that of the approved sample or if the fitting is found to be unsuitable for use in flushing water plumbing systems.

For the use of the fitting in any project, the General Acceptance Number of this letter must be quoted as a means of identification of acceptance of the fitting by this Authority.

Should you have any enquiries, please contact our Engineer Ms Winnie LO at tel. no. 3583 4086.

Yours faithfully,



(YAU Hau Yin)

for Director of Water Supplies

Encl.

c.c. WSD 3321/1/82] - without catalogue
ME/MC] - with soft copy only


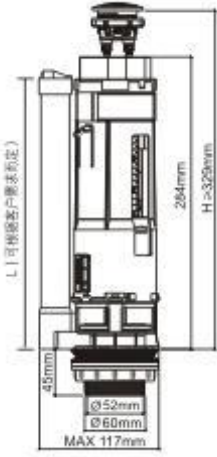


Acme Sanitary Ware Co. Ltd.

1/F, Acme Building, 22-28 Nanking Street, Kowloon, Hong Kong
 Tel: 2388 7171 Fax: 2710 8012
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 Website: www.acmesanitary.com.hk

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SANITARY WARE SPECIFICATION SHEET

<p>Item Descriptions</p> <p>Model</p> <p>Material</p> <p>Manufacturer</p> <p>Supplier</p> <p>Contact Tel/Fax</p> <p>E-mail</p> <p>Website</p>	<p>American Standard (PRC) Plastic outlet valve</p> <p>PC-A2412</p> <p>Plastic</p> <p>American Standard (PRC)</p> <p>Acme Sanitary Ware Co. Ltd Mr. Eric Wong/ Mr. Don Yuen</p> <p>(852) 2388-7171 / (852) 2710-8012</p> <p>acme@acmesanitary.com.hk</p> <p>www.acmesanitary.com.hk</p>	<p style="text-align: center;">Illustration/ Drawing</p> <div style="text-align: center;">  </div> <div style="text-align: center; margin-top: 20px;">  </div>
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Note: The color of the above fittings may be varied without further notice.

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水務署
Water Supplies Department

總部 Headquarters

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7 Gloucester Road, Wan Chai, Hong Kong



本署檔
Our ref.
來函檔號
Your ref.

1/2022 T/J(1115/2022)

電話 :
Tel. :
傳真 : 2824 0578
Fax :

4 January 2023



**Approval of “AMERICAN STANDARD” Flush Valve
(General Acceptance No. C20230002F)**

Your letters ref. WRC/2782 and C-WSD/0979 dated 23 September 2022 and 29 November 2022 respectively refer.

Having considered the test report ref. J27712 issued on 20 May 2022 by Nutek Systems (HK) Limited, this Authority accepts that the fitting described below complies with, and its use when correctly installed does not contravene, the Waterworks Ordinance and Regulations.

Name of Manufacturer: Xiamen R&T Plumbing Technology Co Ltd

Country of Origin: the Mainland of China

Brand: American Standard

Details of Fitting: 2" Plastic dual flush valve

Model: PC-A2412

Body Markings: Nil

Expiry Date: 16 May 2027



Proviso: As the fitting has not been tested for use in contact with water intended for human consumption, the fitting can only be used in flushing water plumbing system.

This Authority hereby permits the use of the above fitting in flushing water plumbing systems subject to full adherence to Waterworks installation requirements. In particular, you are required to draw your customers' attention to the following requirement-

"The flushing volume of the flushing valve should be adjusted to suit the design of the toilet bowl so that wastes can be cleared effectively by a single flush."

"The fitting should be used within the range of working pressures specified by the manufacturer." AND

"The installed fitting should not result in backflow of water that will contaminate the flushing water supply."

A condition of this acceptance is that the fitting to be installed shall be replicas of the sample as certified by the testing agent mentioned above and without modifications. This acceptance may be withdrawn at any time if the standard of the fitting installed fails to meet that of the approved sample or if the fitting is found to be unsuitable for use in flushing water plumbing systems.

For the use of the fitting in any project, the General Acceptance Number of this letter must be quoted as a means of identification of acceptance of the fitting by this Authority.

Should you have any enquiries, please contact our Engineer Ms Winnie LO at tel. no. 3583 4086.

Yours faithfully,



(YAU Hau Yin)

for Director of Water Supplies

Encl.

c.c. WSD 3321/1/82] - without catalogue
ME/MC] - with soft copy only

Test Report

Test
 Title: Testing of WC Pan
 Method: BS 3402: 1969
 Report No.: J 26116
 Completion: 24 Feb., 2021 to 18 Mar., 2021

Applicant (Information provided by client)
 Name:
 Address:

Sample (Information provided by client)
 Description: Close Couple Water Closet

Brand: American Standard
 Model: 2102BFHKP2-WT-0;
 2102HK-WT-0;
 2102HK-WT-2;
 CL21025-6DAHKBFCB;
 CL21025-6DAHKBFCB1 &
 2102-WT-0

Body Marking: **American Standard**
 Manufacturer: LXIL (Thailand) Public Company Limited
 Origin: Thailand



Approved Signatory

Signature:
 Name (title): Chung Siu Yu (Engineer)
 Date: 01 Jun., 2021

Nutek Systems is a testing agency, accepted by the Water Supplies Department, for testing water supply fittings.

REPORT NO.: J 26116

Summary

Test	Remark
1 Visual Examination	C
2 Water Absorption	C
3 Cracking	C
4 Chemical Resistance Test	C
5 Resistance to Staining and Burning	C

Results (apply only to samples tested)

1 Visual Examination

BS 3402: 1969 Cl. 5.3, 5.4 & Table 2

Location	Blemish or defect	Maximum permitted	Remark
General	Wavy finish	None on all visible surfaces	C
	Warpage	Not more than 6mm	C
	Discoloration	None on all visible surfaces	C
Flushing surface and horizontal face of rims of WC pans bidets and urinals	Spots, blister and pinholes	A total of not over three; no grouping; for coloured appliances, blister and pinhole limited to one.	C
	Bubbles and specks	Not over two in one pottery square; a total of not over four	C
	Polishing marks	One only; none permitted for coloured figures	C
Visible surfaces other than above	Spots, blisters and pinholes	A total of not over five; no grouping; for coloured appliances, no blisters are permitted and pinholes are limited to a total of two	C
	Bubbles and specks	Not over three in one pottery square; a total of not over ten	C
Overall result			C

2 Water Absorption

BS 3402: 1969 Cl. 6

ID	Weight (kg)		Absorption (%)	Required	Remark
	Before Test	After Test			
Sample 1	176.3724	176.5361	0.09		C
Sample 2	189.1465	189.3405	0.10	0.75% max.	C
Sample 3	145.2011	145.4129	0.15		C
Average			0.11	0.50% max.	C
Overall result					C



3 Cracking
BS 3402: 1969 Cl. 7

ID	Variable	Unit	Measured	Required	Remark
1	Saturated steam	MN/m ²	0.34	0.33 - 0.35	C
	Duration	h	10	10	C
	Sample 1	---	No	No	C
	Sample 2	---	No		C
Sample 3	---	No	C		
Overall result					C

4 Chemical Resistance Test
BS 3402: 1969 Cl. 8

Table 4 — Chemical solutions

Name of Chemical	Strength of solution %	Time hours	Temperature °C
Acetic acid	10	16	100
Citric acid	10	16	100
Detergent (Note 1)	(Note 1)	48	60
Hydrochloric acid	(Note 2)	48	15 to 21
Sodium hydroxide	5	0.5	60
Sodium stearate	0.15	48	60
Sulphuric acid	2	16	100

NOTE 1: This consists of an aqueous solution containing 0.04% (w/v) of a condensation product of methylol with 8-10 molecules of ethylene oxide. A suitable solution which contains 0.15% (w/v) of the product is obtainable commercially under the trade name "Lissapol 2".

NOTE 2: This solution consists of equal volumes of water and of hydrochloric acid of specific gravity 1.18.

ID	Solution	Time (h)	Temperature (°C)	Measured	Required	Remark
1	Acetic acid	16	100	No Loss	No loss of reflectivity on glaze	C
	Citric acid	16	100	No Loss		C
	Detergent	48	60	No Loss		C
	Hydrochloric acid	48	20	No Loss		C
	Sodium hydroxide	0.5	60	No Loss		C
	Sodium stearate	48	60	No Loss		C
	Sulphuric acid	16	100	No Loss		C
Overall result						C

5 Resistance to Staining and Burning
BS 3402: 1969 Cl. 9

ID	Variable	Unit	Measured	Required	Remark
1	Methylene blue	---	No Stain	No stain remains	C
	Sodium hypochlorite	---	No Stain		C
	Hydrogen peroxide	---	No Stain		C
	Amyl acetate	---	No Stain		C
	Iodine in ethanol	---	No Stain		C
2	Lighted cigarette	---	No Stain		C
Overall result					C



Figure 1 - Sample



Figure 2 - 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 -



Test Report

Test

Title: Testing of combination of WC pan and cistern
 Method: The Hong Kong Water Efficiency Labelling Scheme on Water Closets (May 2018) & BS EN 997: 2012 + A1: 2015
 Report No.: J 24387A
 Completion: 07 Feb., 2020

Applicant (Information provided by client)

Name: _____
 Address: _____

Sample (Information provided by client)

Description: Close Couple Water Closet
 GA for water closet flush valve report no.: J22060



Close Couple Water Closet	2" Flush Valve
Brand: American Standard	American Standard
Model: Z102HK-WT-0	PC-A2412
Body marking: <i>American Standard</i>	<i>R&T</i>
Manufacturer: LIXIL (Thailand) Public Company Limited	XiaMen R&T Plumbing Technology CO., LTD.
Origin: Thailand	China

Approved Signatory

Signature:
 Name (title): Hing Kah Kuin (Engineer)
 Date: 19 Feb., 2020

Nutek Systems is a testing agency,
 accepted by the Water Supplies
 Department, for testing water supply
 fittings.

REPORT NO.: J 24387A

Summary

Test	Remark
1 Flush Volume Test - Full Flush	N
2 Flush Volume Test - Reduced Flush	C
3 Paper Discharge for Reduced Flush Volume for Water Closets	C
4 Solid Discharge and After-flush Volume for Maximum Flush Volume Test for Water Closet	C
5 Liquid Contaminant Dye Retention Test for Water Closets	C
6 Wash of Bowl Test for Water Closets	C

Results (apply only to samples tested)

1 Flush Volume Test - Full Flush

The Voluntary WELS on Water Closets, May 2018, Annex 1, Section I,
 BS EN 997: 2012 + A1: 2015 Cl. 6.5.1 & 6.17.3

ID	Variable	Flush cycle	Measured	Average	Required	Remark
1	Flush Volume (l)	1st	4.80	4.8	N	N
		2nd	4.80			N
		3rd	4.80			N
		4th	4.80			N
		5th	4.70			N
Overall result						N



REPORT NO.: J 24387A

2 Flush Volume Test - Reduced Flush

The Voluntary WELS on Water Closets, May 2018, Annex 1, Section I,
 BS EN 997: 2012 + A1: 2015 Cl. 6.5.2 & 6.17.3

ID	Variable	Flush cycle	Measured	Average	Required	Remark
1	Flush Volume (l)	1st	3.10	3.1	≤ 3.2	C
		2nd	3.10			C
		3rd	3.05			C
		4th	3.10			C
		5th	3.05			C

Note :
 Reduced flush volume ≤ two-third of full flush volume

Overall result	C
----------------	---

Grade	Water flush volume per cycle (l)	
	Full	Reduced
1	4.5 ≤ f ≤ 4.8	3.0 ≤ f ≤ 3.2
2	4.8 < f ≤ 6.5	3.0 < f ≤ 3.5
3	4.5 < f ≤ 6.5	Not specified
4	6.5 < f ≤ 15.0	Not specified
Water Efficiency Grade		1

3 Paper Discharge for Reduced Flush Volume for Water Closets

The Voluntary WELS on Water Closets, May 2018, Annex 1, Section V;
 BS EN 997: 2012 + A1: 2015 Cl. 6.10 & 6.17.8

ID	Variable	Reading	Measured	Required	Remark
1	Flushing with specified toilet paper	1st	All flushed out	See Note	C
		2nd	All flushed out		C
		3rd	All flushed out		C
		4th	All flushed out		C
		5th	All flushed out		C
		6th	All flushed out		C

Note :
 For the first six flush cycles, or for a minimum of eight out of ten flush cycles, all six sheets of toilet paper shall be flushed out of WC pan and outlet.

Overall result	C
----------------	---





REPORT NO.: J 24387A

4 Solid Discharge and After-flush Volume for Maximum Flush Volume Test for Water Closet

The Voluntary WELS on Water Closets, May 2018, Annex 1, Section II,
BS EN 997: 2012 + A1: 2015 Cl. 6.9 & 6.17.7

Flush Cycle	All four specimens were evacuated	Full Flush Volume(l)	After-flush Volume (l)	After-flush Volume(%)	Required	Remark
1st	Yes	4.80	2.30	47.9	≥40%	C
2nd	Yes	4.80	2.20	45.8		C
3rd	Yes	4.80	2.15	44.8		C
4th	Yes	4.75	2.05	43.2		C
5th	Yes	4.80	2.15	44.8		C
6th	Yes	4.70	2.03	43.2		C

Note :

In first 6 flush cycles, or in min, 8 out of 10 cycles, all specimens shall be evacuated.

Solid discharge test	C
After-flush volume test	C
Overall result	C

5 Liquid Contaminant Dye Retention Test for Water Closets

The Voluntary WELS on Water Closets, May 2018, Annex 1, Section III,
BS EN 997: 2012 + A1: 2015 Cl. 6.11 & 6.17.9

Flush Cycle	Full Flush Contaminate ≤ 1%	Reduced Flush Contaminate ≤ 6%
1st	Yes	Yes
2nd	Yes	Yes
3rd	Yes	Yes
4th	Yes	Yes
5th	Yes	Yes

Note :

In first 5 flush cycles, or in min. 9 out of 10 cycles, the contaminate level shall be ≤ 1 % for Full Flush and contaminate level shall be ≤ 6 % for Reduced Flush, if the sample is Dual Flush.

Full flush contaminate	C
Reduced flush contaminate	C
Overall result	C



REPORT NO.: J 24387A

6 Wash of Bowl Test for Water Closets

The Voluntary WELS on Water Closets, May 2018, Annex 1, Section IV,
BS EN 997: 2012 + A1: 2015 Cl. 6.12 & 6.17.10

Variable	Reading	Unit	Measured	Average	Required	Remark
Unflushed area	1st	cm ²	0.0	0.0	≤50	C
	2nd		0.0			
	3rd		0.0			
	4th		0.0			
	5th		0.0			
Overall result						C





Nutek Systems

Nutek Systems (HK) Limited, Unit B, 13/F., Block A, Universal Industrial Centre, 23-25 Shan Mei Street, FO TAN, N.T., HONG KONG
Tel: +852 2605 5736 Fax: +852 2692 0798 info@nuteksystems.com www.nuteksystems.com

Nutek Systems
I certify this to be a true copy
of the original document

Date : 19 FEB 2020

Signed:

REPORT NO.: J 24387A

Figure 1 - Front view



Figure 2 - Side view



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Tel: +852 2605 5736
Fax: +852 2692 0798

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Page 6 of 7



Nutek Systems

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Nutek Systems
I certify this to be a true copy
of the original document

Date : 19 FEB 2020

Signed:

REPORT NO.: J 24387A

Figure 3 - Bottom view



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 -

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