



SETSCO SERVICES PTE LTD

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Business Reg. No. 196900269D

TEST REPORT

(This Report is issued subject to the terms & conditions set out below)

Your Ref: -

Our Ref: MM-32731/1/MA

Date: 23 April 2013

Page 1 of 5

Subject : Testing of Press-Fit Fitting submitted by Hopewell Building Materials Co. Ltd on 01 Apr 2013.

Tested for : **HOPEWELL BUILDING MATERIALS CO LTD**
No. 80 Duna West Road
Shibi Street, Panyu District
Guangzhou City
Guangdong Province
China
Attn: Mr. Alex Li

Date & Place of Test : 12 April 2013 to 19 April 2013 at Setsco Laboratory

Method of Test : BS EN 1254-2 :1998
1) Leak tightness under internal hydrostatic pressure test
2) Resistance to Pull Out test
3) Leak tightness under internal hydrostatic pressure while subjected to bending test

Description of Sample : Nine (09) nos of 'HOPEWELL' brand stainless steel Press-Fit Fittings (see photographs) were received as follow:

S/No	Sample Description	Type	Size (mm)	Marking	Qty
1		90° Elbow	18	HOPEWELL 18-304	04
		Socket		HOPEWELL 18-304	06
		½" Tee		HOPEWELL 18x1/2"-304	01
2	Stainless Steel 'HOPEWELL' Brand Press-Fit Fitting	90° Elbow	54	HOPEWELL 54-304	04
		Socket		HOPEWELL 54-304	06
		½" Tee		HOPEWELL 54x1/2"-304	01
3		90° Elbow	108	HOPEWELL 108-304	04
		Socket		HOPEWELL 108-304	06
		½" Tee		HOPEWELL 108x1/2"-304	01

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- Results** :
- 1) Leaktightness under internal hydrostatic pressure test
The tested sample met the requirements of BS EN 1254-2:1998 specification. (Refer to table 1 attached).
 - 2) Resistance to Pull Out test
The tested sample met the requirements of BS EN 1254-2 :1998 specification. (Refer to table 2 attached).
 - 3) Leaktightness under internal hydrostatic pressure while subjected to bending test
The tested sample met the requirements of BS EN 1254-2 :1998 specification. (Refer to table 3 attached).

A handwritten signature in blue ink, appearing to be 'Mohammad Azam'.

MOHAMMAD AZAM
Testing Officer

A handwritten signature in blue ink, appearing to be 'Chen Yu'.

CHEN YU
Principal Engineer (Mechanical Testing)
Mechanical Technology Division

Results:**Table 1. Leaktightness under internal hydrostatic pressure test**

Test Method	Size (mm)	Type	Result	BS EN 1254-2 : 1998 Clause 5.4 Requirements
The assembled fittings were gradually subjected to pressure of 24 bars and maintained for a minimum of 15 minutes at ambient temperature.	18	90° Elbow	Passed	The fitting under test shall show no visible sign of leakage or damage
		Socket	Passed	
		½" Tee	Passed	
	54	90° Elbow	Passed	
		Socket	Passed	
		½" Tee	Passed	
	108	90° Elbow	Passed	
		Socket	Passed	
		½" Tee	Passed	

Table 2. Resistance to pull out test

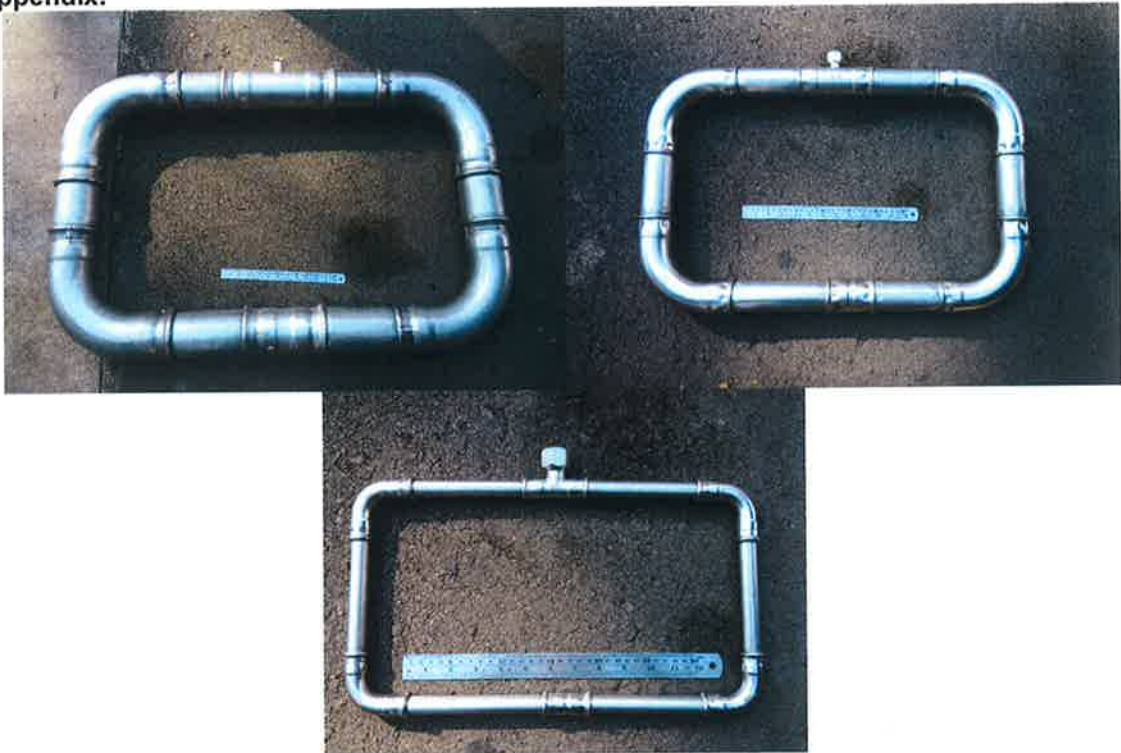
Test Method			Type	Size (mm)	Result	BS EN 1254-2 : 1998 Requirements
Pre-loading	Tensile force (N)	1500	Socket Coupling	18	N.A	-
	Duration (min)	5		54		
				108		
Loading with Pressure	Tensile force (N)	1500	Socket Coupling	18	Passed	Clause 5.5 Table 7 (The fitting under test shall show no visible sign of leakage or damage)
	Pressure (bar)	3		54		
	Duration (min)	5		108		

Table 3. Leak tightness under internal hydrostatic pressure while subjected to bending test

Test Method	Size (mm)	Type	Result	BS EN 1254-2 : 1998 Clause 5.6 Table 8 Requirements
The tube assembly was subjected to an internal hydrostatic pressure of 10 bar and followed by a bending force was applied gradually to cause a deflection of 20mm. This force maintained for a period of 5 minutes after the required deflection is reached.	18	Socket Coupling	Passed	The fitting under test shall show no visible sign of leakage or damage
	54			
	108			




Appendix:



Photograph shows sample as received for test conducted in table 1



Photograph shows sample as received for test conducted in table 2



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Photograph shows sample as received for test conducted in table 3





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Our Ref : MM-32731/2/DJ

Date : 09/04/2013

TEST REPORT

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Page 1 of 2

Subject : Evaluation of the leachability of metals of sample submitted by HOPEWELL BUILDING MATERIALS CO LTD on 02/04/2013 and test commenced on 02/04/2013.

Tested for : **HOPEWELL BUILDING MATERIALS CO LTD**
No. 80 Duna West Road
Shibi Street, Panyu District
Guangzhou City
Guangdong Province
China
Attn : Mr Alex Li

Method of Test : AS/NZS 4020:2005 : Appendix H

Specification : AS/NZS 4020 : 2005

Sample Description : 'Hopewell' Straight Coupling, OD54mm
(Refer to Appendix for photo of sample.)

Results : Metal element of mercury was analyzed through the method of Mercury Analyzer. Metal elements of silver, barium, cadmium, chromium, copper, nickel, lead, molybdenum, arsenic, selenium and antimony were analyzed through the method of ICP-MS. The results are summarized in Table 1.

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The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme
LA-1994-0068-A, LA-1987-0001-B, LA-1993-0067-G, LA-1993-0051-C, LA-1998-0144-D, LA-2000-0181-F

Table 1

Elements	Detection Limit	Blank	Extraction Results			Requirement AS/NZS 4020 : 2005	
			1 st Data	2 nd Data	3 rd Data		
Leachability of Metal Element (ppb / µg/L)	Silver (Ag)	0.025	<0.025	<0.025	<0.025	100 max	
	Barium (Ba)	1.508	<1.508	1.913	2.308	2.231	700 max
	Cadmium (Cd)	0.050	<0.050	<0.050	<0.050	<0.050	2 max
	Chromium (Cr)	0.151	<0.151	<0.151	<0.151	<0.151	50 max
	Copper (Cu)	0.301	<0.301	<0.301	<0.301	<0.301	2000 max
	Nickel (Ni)	0.126	<0.126	0.830	0.654	0.844	20 max
	Lead (Pb)	0.050	<0.050	<0.050	<0.050	<0.050	10 max
	Molybdenum (Mo)	0.025	<0.025	0.040	0.044	0.042	5 max
	Arsenic (As)	0.050	<0.050	<0.050	<0.050	<0.050	7 max
	Mercury (Hg)	0.503	<0.503	<0.503	<0.503	<0.503	1 max
	Selenium (Se)	0.402	<0.402	<0.402	<0.402	<0.402	10 max
Antimony (Sb)	0.126	<0.126	<0.126	<0.126	<0.126	3 max	

Remark : The sample meets the requirement.


 RENNY HUSNI
 EXECUTIVE CHEMIST


 DING JIAN
 PRINCIPAL CHEMIST

BIOLOGICAL AND CHEMICAL TECHNOLOGY DIVISION

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APPENDIX

