

TEST REPORT

Report No. 112197 2808

Client

Waterco Ltd
PO Box 230
Rydalmere BC NSW 1710

Product Tested

Manufacturer: Waterco Ltd
Brand: Waterco
Model Nos: ASP566
Model Name: Suction threaded 40 mm Regency
Description: Suction cover
Sample No: 2808
Sample: Selected by Client

Testing accordance with AS1926.3 2010

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Test results relate to item tested

Attachments

Appendix 1: Photo of test sample
Appendix 2

Tested by: David Hewitt

Prepared by: Davon Isackson

Reviewed by: Simon Clarke

Outlet covers

Applicable standard: AS 1926.3 Clause 6.2

<p>The following requirements apply:</p> <p>(a) Outlet covers shall be tested in accordance with Appendix A by an accredited testing laboratory (Clause 3.1).</p> <p>(b) Outlet covers that are certified as having been tested and marked in accordance with ASME A112.19.8 shall be deemed to comply under this Standard and not be subject to the testing and approval procedure in Appendix A.</p> <p>(c) Outlet covers shall be permanently marked with— (i) the minimum nominal pipe diameter, in millimetres, to which it can be fitted; (ii) the maximum allowable flow rate, in litres per minute (L/min) (see item (d)); and (iii) the testing authority test number and date of test.</p> <p>(d) The maximum allowable flow rate (see item (c)(ii)) shall be 80% of the lesser of the flow rates determined in the tests in Paragraphs A5.1 and A5.2.</p> <p>(e) Outlet covers shall be installed on outlet points in a manner that prevents their removal without the use of tools.</p>	<p>a) License No. 14783</p> <p>b) Not marked as complying to ASME A112.19.8.</p> <p>c) This requirement is not applicable at time of testing.</p> <p>d) See test data in this Report.</p> <p>e) Tools are required for removal after installation.</p>
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Sampling

Applicable standard: AS 1926.3 Appendix A4

Criteria	Sampling
The outlet cover manufacturer shall supply the accredited testing laboratory (see Clause 3.1) with 10 samples of each cover to be tested from which the laboratory shall select three at random to be tested.	Client has supplied 10 samples and three Test Specimens were selected randomly for testing and reported as 1, 2 and 3.

Hair entrapment test

Applicable standard: AS 1926.3 Appendix A

Test Method: Appendix A5.1

Criteria							
The force required to remove the hair shall not exceed 20 N.							
The flow rate at which the hair can be removed with 20 N or less, shall be the maximum flow rating for the outlet cover							
Test Requirements							
<u>Withdraw – Perpendicular</u> Hold duration = 2 minutes Removal rate = 125 mm/s Force to withdraw = 20 N Max.				<u>Withdraw – 40° to Perpendicular</u> Hold duration = 2 minutes Removal rate = 125 mm/s Force to withdraw = 20 N Max.			
Test Data for flow with removal at < 20N				Test Data for flow with removal at < 20N			
Test Specimen	Flow rate (L/min)	Force (kg)	Force (N)	Test Specimen	Flow rate (L/min)	Force (kg)	Force (N)
1	180	0.48	4.7	1	180	0.16	1.6
2	180	0.40	3.9	2	180	0.12	1.2
3	180	0.48	4.7	3	180	0.6	5.9
Criteria Test Method: Appendix A5.1.2				Observation			
Does the hair enter the cover?				Yes, hair enters into the cover initially, but remaining hair begins to fold on the outside of the suction cover.			

Body entrapment test

Applicable standard: AS 1926.3 Appendix A

Test Method: Appendix A5.2

Criteria				
The force required to remove the body blocking element when pulling perpendicular to the wall or floor surface shall not exceed 50 N.				
Test Requirements		Test Conditions		
<u>Withdraw – Perpendicular</u> Initial loading = 250 N Force to withdraw = 50 N Max. Body blocking element to Figure A6 with weight adjusted to neutral buoyancy before adding applied force.		<u>Withdraw – Perpendicular</u> Rated flow ^{#1} (L/min)= 180 Applied Force to suction cover (N) = 250 Applied Force to suction cover (kg) = 25.5		
Test Data for flow with removal at Rated Flow				
Test Specimen	Rated flow ^{#1} (L/min)	Total Force (kg)	Removal Force (kg)	Force (N)
1	180	27.80	2.30	22.6
2	180	27.46	1.96	19.2
3	180	27.84	2.34	23.0
Note: ^{#1} Determined in accordance with Appendix A5.1				

Physical entrapment test

Applicable standard: AS 1926.3 Appendix A

Test Method: Appendix A5.3

COMPLIES

Criteria		
<u>Part 1 ≤ 8 mm</u> Outlet covers with openings sized less than 8 mm in any dimension.		
Test Requirements	Test Conditions	Observation
<u>Conditioning</u> Temperature = 20 ± 2 °C Duration = 24 Hours minimum <u>A5.3.1 (a) Dimensional</u> Opening size ≤ 8 mm	<u>Conditioning</u> Temperature (°C) = 20.6 Duration (Hours) = > 36	Opening size (mm) = 5.68
<u>Part 1 > 8mm</u> Outlet covers with openings greater than 8 mm in any dimension.		
Test Requirements	Observation	
(a) Outlet covers with openings more than 8 mm in any one dimension shall not allow access of the large end of the jointed test finger (A3(e)). (b) Outlet covers which allow entry of the test probe past the first joint shall have no abrasion, cutting, pinching, or puncture hazards within 60 mm of the entry point. (c) The force required to remove the test probe from openings in the outlet cover shall not exceed 50 N.	Not applicable as opening is less than 8 mm	
NOTE: ^{#2} Lesser of flow rates determined in A5.1.2(g) and A5.2.2(d)		

Structural integrity test

Applicable standard: AS 1926.3 Appendix A

Test Method: Appendix A5.4

COMPLIES

Criteria		
<u>A5.4.2.2 Pressure tests</u> When tested the outlet cover shall show no sign of permanent deformation or cracks and no loss of material exclusive of plating or finish.		
Test Requirements	Test Conditions	Observation
Temperature = Ambient Pressure = 150 kPa Duration = 24 Hours	Temperature (°C) = 21.1 Pressure (kPa) = 150 Duration (Hours) = 24h 1m	No sign of permanent deformation or cracks and no loss of material.
<u>A5.4.3 Shear test</u> At completion of the test, the outlet cover is inspected, and shall show no sign of permanent deformation or cracks, and no loss of material exclusive of plating or finish		
Test Requirements	Test Conditions	Observation
Temperature = Ambient Force = 500 N Duration = 2 minutes	Temperature (°C) = 20.7 Force (N) = 500 Duration (min) = 2 min 18s	No sign of permanent deformation or cracks, and no loss of material.

Summary of data

Applicable standard: AS 1926.3 Appendix A6

COMPLIES

Test requirement	Observation
The water flow rate at which the hair sample could be removed from the outlet cover with a force 20 N or less.	Flow Rate (L/min) = 180
The force required to remove the body blocking element at the flow rate recorded in Item (a) above	Force (N) = 23.0
If the recorded force in Item (b) above is greater than 50 N then the reduced flow rate at which the force required was 50 N or less.	Flow Rate (L/min) = 180
Where the outlet cover opening size was such that the physical entrapment test was undertaken, the force applied to remove the test object from the cover openings.	Not applicable less than 8 mm
Whether or not the outlet cover passed the structural integrity tests and, if not, then details of its failings.	Meets acceptance criteria

Maximum allowable flow rate

Applicable standard: AS 1926.3 Clause 6.2 c , d and e

Requirement	Observation
Test Number	112197 2808
Date of Test	02/11/2011
Pipe sizing used in testing	DN40
The maximum allowable flow rate shall be 80% of the lesser of the flow rates determined in the tests in Paragraphs A5.1 and A5.2.	144 L/min

Related models

Applicable standard: AS 1926.3

A range of models manufactured by the same manufacturer of the same brand which will have the same performance requirements and physical characteristics relevant to maximum allowable flow, design and structural integrity.

For example an outlet cover with a variety of colours or finishes or different end connection types.

Model Number	Description	Notes
45351	Suction threaded 40 mm Regency Black	Equivalent to white fitting

End of Report

Simon Clarke
Approved Signatory

Test Report Number 112197

Figure 1. Test sample

