

TEST REPORT

No. 201, Building A, Yushu Industrial Park
Science City, Luogang District
Guangzhou, Guangdong 510663 – China
Ph: 020-82260946 Fax: 020-82260856
[http:// www.iapmortl.org](http://www.iapmortl.org)

Report Number: 1976-14001

Report Issued: May 21, 2014

Lab Project No.: 23271

Client: HEBEI RUNWANGDA MAKING CLEAN MATERIALS CO., LTD
INDUSTRIAL DISTRICT, WUQIANG COUNTY
HEBEI PROVINCE
CHINA

Source of Samples: The samples were sent by the manufacturer and received by IAPMO R&T Lab in good condition on April 24, 2014

Date of Testing: April 28, 2014 through May 18, 2014

Sample Description: Emergency shower and eye wash combination unit

Model: WJH0358A Emergency Shower and Eye wash Combination unit
WJH0758A Emergency Shower and Eye wash Combination unit
WJH0358D Emergency Shower

Scope of Testing: The purpose of the testing was to determine if the samples tested of Emergency shower and eye wash combination unit met the applicable requirements of ANSI Z358.1-2009, entitled “American National Standard for Emergency Eyewash and Shower Equipment”.

Conclusion: The samples tested of the emergency shower and eye wash combination units from HEBEI RUNWANGDA MAKING CLEAN MATERIALS CO., LTD, models were shown above, COMPLIED with the applicable requirements of ANSI Z358.1-2009.

By our signatures below we certify that all the testing and sample preparation for this report was performed under continuous, direct supervision of IAPMO R&T Lab, unless otherwise stated.

Tested by,

Freeman Liu, Project Engineer

Reviewed by,

Xicheng Xiong, Testing Manager

Primary Standard: ANSI Z358.1-2009, sections tested / evaluated:

- 4 Emergency Shower
- 5 Eye washes Equipment
- 7 Combination Units

Clauses/Sections of ANSI Z358.1-2009 not listed above were considered not applicable to subject product.

Test Results: All tests and evaluations were conducted per the written procedures specified in the standard.

ANSI Z358.1-2009

4. Emergency Showers

4.1 Performance of Emergency Showers – COMPLIED

4.1.1 A means (handle) was provided to ensure that a controlled flow of flushing fluid is provided at a velocity low enough to be non-injurious to the user.

4.1.2 The emergency shower was capable of delivering flushing fluid at a minimum of 20 gpm for a minimum of 15 minutes. Refer to Clause 4.4.1.

4.1.3 The emergency shower provided a flushing fluid column that was at least 82 inches and not more than 96 inches in height from the surface on which the user stood. Refer to clause 4.4.1.

4.1.4 The spray pattern had a diameter of more than 20 inches at 60 inches above the surface on which the user stood, and the center of the spray pattern was located at least 16 inches from any obstruction. The flushing fluid was substantially dispersed throughout the pattern. Refer to clause 4.4.1.

4.1.5 The emergency shower was constructed of material (plastic or stainless steel) that would not corrode in the presence of the flushing fluid. Stored flushing fluid was protected against airborne contaminants.

4.2 Performance of Control Valve – COMPLIED

The valve remained open without the use of the operator's hands until intentionally closed. The valve was simple to operate and went from “off” to “on” in 1 second or less. The valve was resistant to corrosion (brass). Manual actuator was easy to locate and readily accessible to the user. The valve actuator was located not more than 69 inches above the level on which the user stood.

Model	The valve actuator height (in.)
WJH0358A	66.54
WJH0758A	65.75
WJH0358D	The actual high was dependent on field installation

4.3 Emergency Shower Enclosures – NOT APPLICABLE

Finding: No emergency shower enclosures were provided.

4.4 Testing Procedures for Certification

4.4.1 Plumbed Emergency Showers – COMPLIED

The plumbed emergency shower was certified as follows:

- (1) Connect a flow meter to the unit to be tested for measuring flushing fluid flow.
- (2) Connect the unit per the manufacturer's specifications to a flushing fluid supply at a flow pressure of 30 psi.
- (3) Open the valve on the unit and verify that it fully opens in one second or less and that it stays open.
- (4) Determine that flushing fluid is substantially dispersed throughout the pattern. The flushing fluid column pattern shall be at least 82 inches and no more than 96 inches from the surface on which the user stands. Measure the diameter of the flushing fluid pattern 60 inches above the surface on which the user stands. The diameter shall be a minimum of 20 inches. Throughout the 15-minute test, verify that the flow rate is a minimum of 20 gpm.

Finding:

Model	Flow rate at 30PSI (gpm)	The flushing fluid column pattern height (in.)	The diameter of the flushing fluid pattern 60 inches above the surface (in.)
WJH0358A	30.38	84.25	21.2
WJH0758A	31.18	83.50	24.4
WJH0358D	29.06	The actual high was dependent on field installation	21.2

4.5 Installation – FOLLOWED

It is the installer's responsibility to ensure that emergency showers shall be complied with the clause 4.5.1 to 4.5.8.

4.6 Maintenance and Training – FOLLOWED

- 4.6.1 Manufacturers shall provide operation, inspection and maintenance instructions with emergency shower equipment. Instructions shall be readily accessible to maintenance and training personnel.
- 4.6.2 Plumbed emergency showers shall be activated weekly for a period long enough to verify operation and ensure that flushing fluid is available. (See Appendix B7)
- 4.6.4 Employees who may be exposed to hazardous materials shall be instructed in the location and proper use of emergency showers.
- 4.6.5 All emergency showers shall be inspected annually to assure conformance with Section 4.5 requirements of this standard.

5 Eye Wash Equipment (For the model WJH0358A and WJH0758A only)

5.1 Performance of Eye washes Units - COMPLIED

- 5.1.1 A means (nozzles) was provided to ensure that a controlled flow of flushing fluid was provided to both eyes simultaneously at a velocity low enough to be non-injurious to the user.
- 5.1.2 The eye wash unit was designed and positioned in such a way as to pose no hazard to the user.
- 5.1.3 Nozzles and flushing fluid units were protected from airborne contaminants using covering caps. No separate motion was required by the operator when activating the unit.
- 5.1.4 The eye washes unit were designed, manufactured and installed in such a manner that once activated, they could be used without requiring the use of the operator's hands.
- 5.1.5 Eye washes were constructed of materials (plastics, rubber and brass) that would not corrode in the presence of the flushing fluid. Stored flushing fluid was protected against airborne contaminants.
- 5.1.6 Eye washes equipment was capable of delivering flushing fluid to the eyes not less than 1.5 liters/m (0.4 gpm) for 15 minutes. The unit did not contain shut-off valves in the supply line. The eye washes unit can be turned "ON" (by pressing the handle) in one second and stayed open. The flushing streams rose to approximately equal heights, and that the flushing fluid would wash both eyes simultaneously at a velocity low enough to be non-injurious to the user. Refer to the clause 5.3.1
- 5.1.7 The eye washes unit was designed to provide enough room to allow the eyelids to be held open with the hands while the eyes were in the flushing fluid stream.
- 5.1.8 The eye washes unit was designed to flush fluids to both eyes simultaneously. A test gauge for making determination of a suitable eyewash pattern was a minimum 4 inches in length with two sets of parallel lines equidistant from the center. The interior sets of lines were 1.25 inches apart and the exterior lines were 3.25 inches apart. With the gauge placed on top of the stream of the eyewash lowered to not more than 1.5 inches below the fluid's peak, the flushing fluid was able to cover the areas between the interior and exterior lines at some point less than 8 inches above eyewash nozzles. Refer to the clause 5.3.1

5.2 Performance of Control Valve – COMPLIED

Once activated, the valve remained open without the use of the operator's hands until intentionally closed. The valve was simple to operate and, operable from "off" to "on" in 1 second or less. The valve was corrosion resistant and were easy to locate and readily accessible to the user.

5.3 Testing Procedure for Certification – COMPLIED

5.3.1 Plumbed Eyewashes

The plumbed eyewashes unit was certified as follows:

- (1) Connect a flow meter to the unit to be tested for measuring flushing fluid flow.
- (2) Connect the unit per the manufacturer's specifications to a flushing fluid supply at a flow pressure of 30 psi.
- (3) Open the valve on the unit and verify that it fully opens in one second or less and that it stays open.
- (4) Throughout the 15 min. test, verify that the flow rate is a minimum of 0.4 gpm. And that the flushing fluid covers the areas between the interior and exterior lines of the gauge at some point less than 8 in. above the eyewash nozzles.

Finding:

Model	Flow rate at 30PSI (gpm)	Flushing fluid covers the areas between the interior and exterior lines (in.)
WJH0358A	8.19	4.3
WJH0758A	4.94	3.0

5.4 Installation – FOLLOWED

It is the installer's responsibility to ensure that eye washes shall be complied with the clause 5.4.1 to 5.4.8.

5.5 Maintenance and Training – FOLLOWED

- 5.5.1 Manufacturers shall provide operation, inspection and maintenance instructions with eyewashes equipment. Instructions shall be readily accessible to maintenance and training personnel.
- 5.5.2 Plumbed eyewashes shall be activated weekly for a period long enough to verify operation and ensure that flushing fluid is available. (See Appendix B7)
- 5.5.4 Employees who may be exposed to hazardous materials shall be instructed in the location and proper use of eyewashes.
- 5.5.5 All eyewashes shall be inspected annually to assure conformance with Section 5.4 requirements of this standard.

7. Combination Units (For the model WJH0358A and WJH0758A only)

7.1 Performance of Combination Units – COMPLIED

Components of combination units were operate individually and simultaneously in accordance with the following sections:

- 7.1.1 Emergency showers met the performance requirements of Section 4 (refer to section 4).

7.1.2 Eye washes met the performance requirements of Section 5 (refer to section 5).

7.2 Performance of Control Valve – COMPLIED

Each valve were met the applicable requirements of Sections 4, 5, and 8.2.2, depending on which of the components listed in Section 7.1 are included.

7.3 Performance Testing Procedures – COMPLIED

Each part of the combination unit was certified individually and when activated simultaneously be in accordance with the procedures outlined in Sections 4, 5 and 8.2, depending on which of the components listed in Section 7.1 are included.

7.4 Installation – FOLLOWED

It is the installer's responsibility to ensure that the combination units shall be complied with the clause 7.4.1 to 7.4.6.

7.5 Maintenance and Training – FOLLOWED

7.5.1 Manufacturers shall provide operation, inspection and maintenance instructions with combination units. Instructions shall be readily accessible to maintenance and inspection personnel.

7.5.2 Plumbed combination units shall be activated weekly for a period long enough to verify operation and ensure that flushing fluid is available. (See Appendix B7)

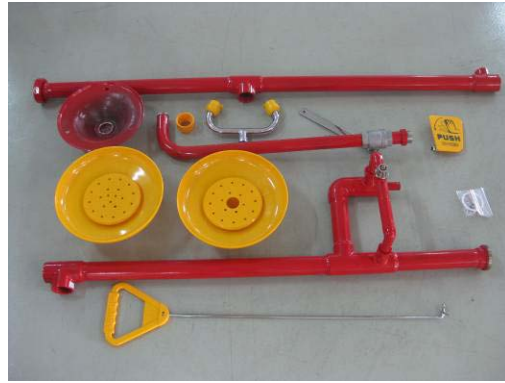
7.5.4 Employees who may be exposed to hazardous materials shall be instructed in the location and proper use of combination units.

7.5.5 All combination units shall be inspected annually to assure conformance with Section 7.4 requirements of this standard.

Photograph of Sample Tested:



WJH0358A



WJH0758A



WJH0358D