

Testing Manual

For Customer Presentation

Fire Extinguishing Ball



Siam Safety Premier Co.,Ltd.

14/8-9 Moo. 1

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Forward

This Testing Manual was prepared to be the guideline for testing the Fire Extinguishing Ball for demonstration in front of the customer who is interested to see the demonstration as group people more than 5 persons or the VIP customer.

The Fire Extinguishing Ball is new innovation in fire protection .It is invented and designed for the purpose of alleviation the fire disaster and use for fire extinguishing in the building and consist of it must be have actual ignition of the fire and whenever to use the Fire Extinguishing Ball in the real situation, it will have more problem if it is without the testing manual for testing in front of the customer.

In order to gain the solid confidence and solve the problem in apply the Fire Extinguishing Ball for the distributor, end users or the people who will buy the Fire Extinguishing Ball. Siam Safety Premier Co., Ltd. has created this testing manual for Fire Extinguishing Ball based on the testing results of Department of Police Fire Bridge and test results from any laboratories to testing as follow with performance fire extinguisher of the Fire Extinguishing Ball is guide in create this testing manual.

Therefore the tester operator who would like to test in front of the customer, it is more essential to use this testing manual for guide in testing for make the confidence for customer and in order to make the testing is more accurately and is potential.

Mr. Phanawatnan Kaimart
Managing Director
Inventor

UN Class

UN Number : UN 0353
UN Class : 1.4G
Intended use : Fire Safety

1.4G	Pyrotechnic substance, or article containing a pyrotechnic substance, or article containing both an explosive substance and an illuminating, incendiary, tear- or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphides, a pyrophoric substance, a flammable liquid or gel, or hypergolic liquids)
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Pour the oil into the tray and ignite a fire is not allowed to test with Fire Extinguishing Ball, using this testing will lead to jeopardize to people in the area.

Best Regards,

**Mr. Woradech Kaimart
Managing Director**

Recommendation

In case of the customer do not request to conduct the testing for the Fire Extinguishing Ball as shown in sampling testing in Station 3 and 4 .We would like you to considerate to conduct the testing only sampling testing in Station 1 and 2 in order to reduce the expense and save the time for conduct the testing .

Apparatus for testing



Device for measuring the volume of liquids



Moisture Meter



Stopwatch



Hammer



Device for water flower
water flower



Saw



Drill for punching the wood



Meter Tape



Caliper



Water Tank



Wood for ignition fire

Warning for Testing

- 1. The flammable liquid for testing must be complied with in the testing manual.**
- 2. Measuring the flammable liquid must be equal with the volume which is shown in the testing manual.**
- 3. The dimension of wood and moisture must be complied and follow with the testing manual.**
- 4. Observation in throwing the Fire Extinguishing Ball, allow the pre-burn the flammable liquid and throw the Fire Extinguishing Ball into the center of fire. Please be careful the wood must not be burnt until it is ash.**
- 5. The Fire Extinguishing Ball must be thrown into the center of fire or base of fire.**

STATION (1)

TESTING WITH CEMENT RINGS

1. Apparatus

- 1.1 Device for measuring the volume of liquids.
- 1.2 Wood moisture meter
- 1.3 Stopwatch
- 1.4 Wood for ignition the fire
- 1.5 Device for water the flower

2. Material

- 2.1 Two (2) Cement Rings with dimension of the diameter of width x height = 120 x 30 CM.
- 2.2 Thirty six (36) Rubber wood (*Dipterocarpus* spp.) containing not exceed 13% of moisture which is dimension of wide x length x thick = 5 x 120 x 5 CM.
- 2.3 Flammable mixed liquid by using Mixed oil by 4 liters of Diesel and 3 liters of Gasoline (use only 3 liters)
- 2.4 Three (3) kilograms Portland Cement

3. Construction of Cement Ring test

- 3.1 To put 2 cement rings as layer with together on the floor.
- 3.2 To make a hole in 1st cement ring by the diameter of hole is 5 inches.
- 3.3 To anoint the Portland with the 1st cement ring together with the floor. (As shown in Figure 1)

4. Wooden placing

- 4.1 To place the wood in the alternative together in the cement ring until the wood as pit form. (As shown in Figure 1)

5. Procedure

- 5.1 Set the test in an open area with a clam wind condition.
- 5.2 To use the flammable liquid which is contained in the device for water the flower by pouring through the surface of wood, to be careful not to pour the oil leakage out of cement ring.

- 5.3 Set fire to the wood by ignition the mixed liquids as time for five (5) minutes after ignition the fire.
- 5.4 Allow the pre-burn time for five (5) minutes after the wood is ignited, after that to throw one fire extinguishing ball into the center of fire.
- 5.5 Observe the burnt wood for two (2) minutes .It should not be re-ignited.

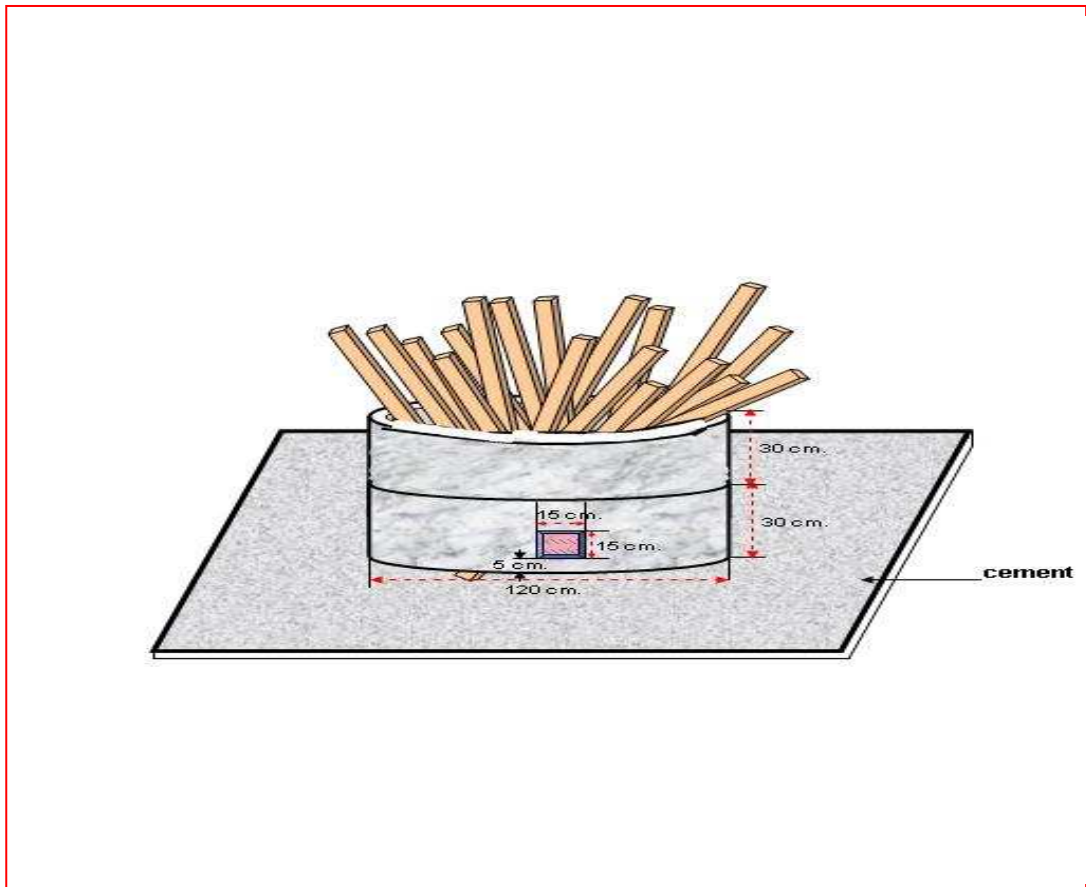
6. Testing operator

- 6.1 An operator, who conducts the performance test, must have the experience on testing the Fire Extinguishing Ball.

7. Observations

- Moisture contends in wood for testing.
- The direction of wind.
- Period time until completely burning of the flammable liquid.

FIGURE (1)



STATION (2)

OUTDOOR FIRE TESTING

1. Apparatus

- 1.1 Device for measuring the volume of liquids.
- 1.2 Wood moisture meter.
- 1.3 Stopwatch
- 1.4 Hammer
- 1.5 Device for water the flower
- 1.6 Saw for cutting the wood
- 1.7 Drill for punching the wood
- 1.8 Measuring tape
- 1.9 Caliper (Vernier)
- 1.10 Wood for ignition the fire.
- 1.11 Twenty (20) Liters of Tank of water

2. Material

- 2.1 One (1) Ply woods with dimension of width x length x thick = 120 x 120 x 1.5 CM. (For cover back side)
- 2.2 Two (2) Ply woods with dimension of width x length x thick = 90 x 120 x 1.5 CM. (For cover side view)
- 2.3 One (1) Ply wood with dimension of wide x height x thick = 120 x 50 x 1.5 CM. (For cover front side)
- 2.4 One (1) Plywood with dimension of wide x height x thick = 120 x 90 x 1.5 CM. (For putting on the floor for prevention the damaged floor)
- 2.5 One (1) iron sheet (plain zinc) to cover underneath which prevent oil leak out. Width x length x thick = 145 x 115 x 0.05 CM.
- 2.6 Wire = 4 meters.
- 2.7 One (1) kilogram of Nail dimension of length = 1.0 inches.
- 2.8 Flammable mixed liquid by using mixed oil by 2 liters of Diesel and 3 liters of Gasoline (use only 2 liters)
- 2.9 Sixty Four (64) Rubber woods (*Dipterocarpus* spp.) which is dimension of length x width x thick = 120 x 5 x 5CM. and containing less than 13% of moisture.

3. Wooden placing

- 3.1 To place the wood in column way by place next to surrounding the wall ,by using the wood of dimension of width X length X thick = 5 X 120 X 5 CM.
- 3.2 To use the wire or nail hold by surrounding for prevention the wood is fall (As shown in Figure 2)
- 3.3 To use the Rubber wood with the dimension of length x width x thick = 90 x 5 x 5 CM. to place on the floor in the row way (as shown in Figure 2)
- 3.4 To use plywood with the dimension of length x width x thick = 120 x 50 x 1.5 CM. Cover in the front side (As shown in Figure 2)
- 3.5 To use ply wood with the dimension of length x width x thick = 120 x 40 x 1.5CM. Cover the top side (As shown in figure 2)

4. Procedure

- 4.1 Set the test in an open area with a clam wind condition.
- 4.2 To use the flammable liquid which is contained in the device for water the flower by pour through the wood which is prepared.
- 4.3 Set fire to the wood by ignition the mixed liquids as time for three (3) minutes after ignition the fire.
- 4.4 Allow the pre-burn time for three (3) minutes after the wood is ignited, after that to throw one (1) fire ball into the fire.
- 4.5 Observe the burnt wood for two (2) minutes .It should not be re-ignited.

5. Testing operator

- 5.1 An operator, who conducts the performance test, must have the experience on testing fire ball.

6. The following observations shall be made and recorded.

- 6.1 Before the test
 - ❖ To observe moisture content of the wood.
 - ❖ The direction of wind.
 - ❖ Burnout time of the flammable liquid.(Before to throw the Fire Extinguishing Ball)

FIGURE 2

