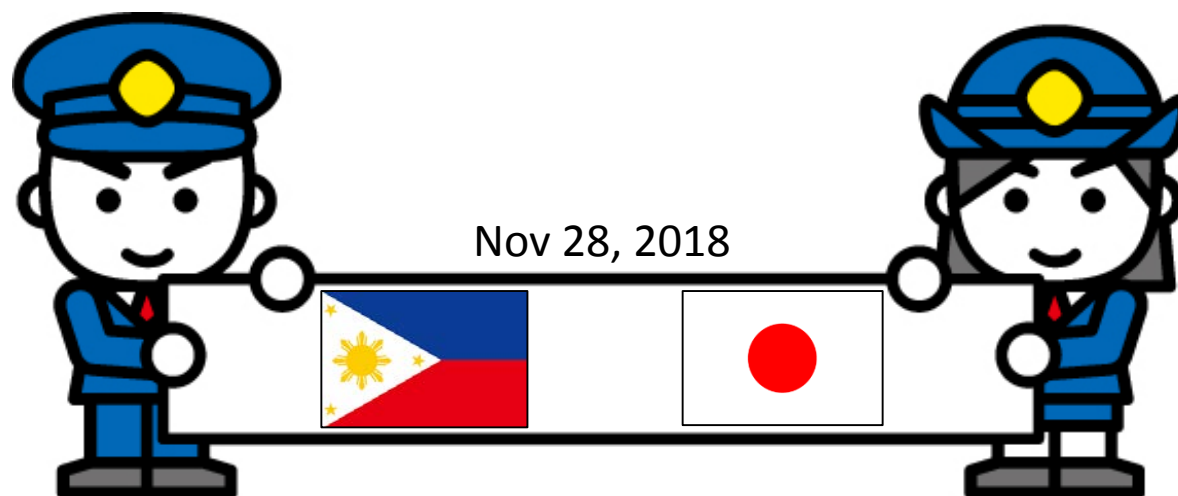


Japanese Fire Protection Equipment Certification System

- Inspection and Self-Labeling Systems -



Fire and Disaster Management Agency

Director for Fire Equipment

Mitsuteru MAEHARA

CERTIFICATION SYSTEM in JAPAN



PURPOSE of CERTIFICATION SYSTEM

Requirements for fire protection equipment

- Precaution against fire all the time
- Proper operations in case of fire, etc.

What is necessary for these requirements

- Define performance and functions that the equipment must make sure to do
- **Design and manufacture the equipment with ensuring the appropriate performance and functions**
- Proper installation
- Proper control and maintenance

Technical standards

Inspection and self-labeling system

Installation standards / inspection

Check list / report

Items subject to the inspection/self-labeling systems

Fire protection equipment and tools which come under the followings.

- Since the equipment is used and operated only in emergency conditions such as fire incident, it is difficult for users to check its performance in advance
- Malfunction of the equipment will cause serious troubles for fire-fighting activities

Subject to inspection

The equipment that is strongly required to be inspected in advance by a third party.

Subject to self-labeling

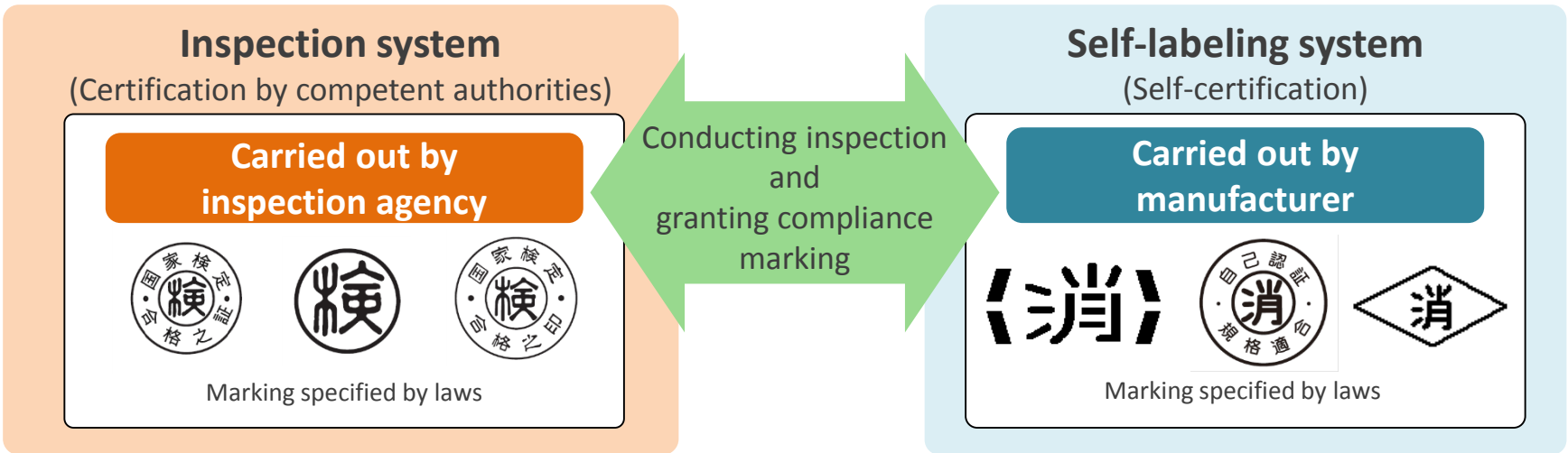
The equipment which is not necessarily supposed to be inspected by a third party but may have the securement of its performance under the responsibility of manufacturers.



ABOUT INSPECTION AND SELF-LABELING SYSTEMS

Regulation of sales of the fire protection equipment and tools

The system prohibits sale, display, construction usage, etc, of items without attached the marking specified by laws










Class	Equipment and tools subject to inspection	Equipment and tools subject to self-labeling system
Applicable items	12 items	6 items
Outline of the System	<ul style="list-style-type: none"> ▪ Approval and grant of a model number. ▪ The Japan Fire Equipment Inspection Institute or a registered inspection authority verifies that the product conforms to the granted model and gives an acceptance marking if the test is passed. ▪ Without this acceptance marking stamped, sale, display, construction usage, etc., are prohibited. 	<ul style="list-style-type: none"> ▪ Notification to Minister for Internal Affairs and Communications ▪ Manufacturer or importer does a self check if the product complies with Ministerial Ordinance and attaches the correspondent compliance marking. ▪ Without this compliance marking stamped, sale, display, construction usage, etc., are prohibited.
Implementing body	The Japan Fire Equipment Inspection Institute or a registered inspection authority	Manufacturers or importers



INSPECTION SYSTEM










EQUIPMENT AND TOOLS SUBJECT TO INSPECTION







Type	Item	Acceptance mark	Description
Fire extinguishing	Fire extinguishers 	 Label	Manually operated equipment for fire extinguishing by emitting water or other fire extinguishing agent under pressure. ※Excluding equipment used in fixed condition and simple aerosol fire extinguishers.
	Fire extinguishing agents for fire extinguishers 	 Stamp	Fire extinguishing agents for fire extinguishers (excluding carbon dioxide).
	Foam concentrates 		Fire extinguishing agent that, produces a foam used for fire extinguishing when mixed with water in specified concentration, and then mixed with air or an inert gas.
	Closed-type sprinkler heads 	 Label or Marking	Devices used in sprinklers and other fire extinguishing equipment, which automatically disperse pressurized water evenly in a circle or a semicircle around the axis of the head, when detecting the temperature reaching a certain level.



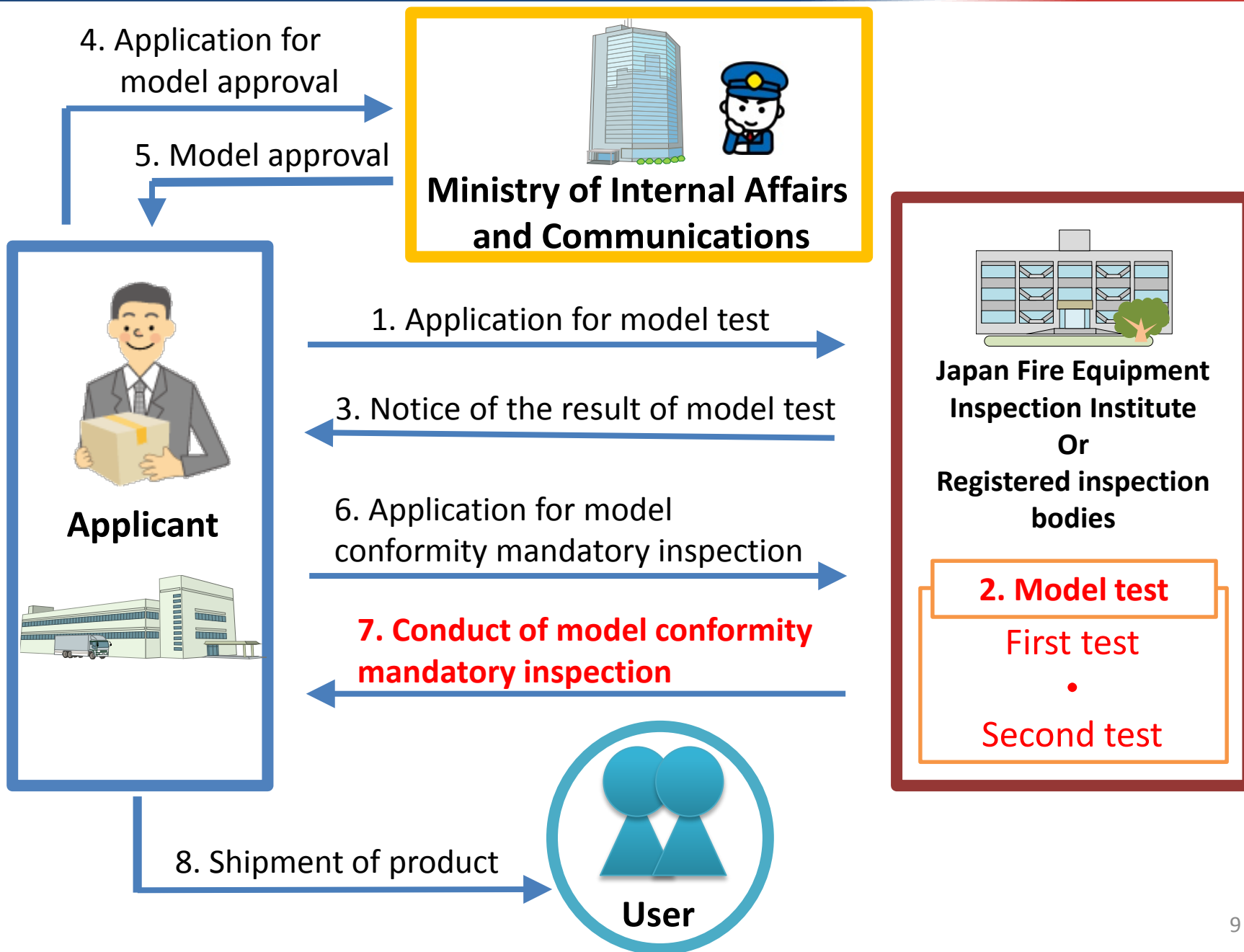
EQUIPMENT AND TOOLS SUBJECT TO INSPECTION

Type	Item	Acceptance mark	Description
Fire extinguishing	Water flow detecting devices 	 <p>punch</p>	<p>Devices used in sprinklers and other fire extinguishing equipment, that automatically detect water flow in valve body due to operation of the sprinkler, open the valve and issue a signal or alarm.</p>
	Deluge valves 		<p>Devices that open valves by actuation of a fire sensor head or the like, installed in a water discharge area of a sprinkler, supplying water from a water source to the open head or the like of the discharge area.</p>
Evacuation	Metallic escape ladders 	 <p>Label</p>	<p>Ladders, made of metal, installed on balconies or the like, used for evacuation in case of fire to a directly lower floor or a ground floor.</p> <p>Divided into 3 broad categories depending on usage: fixed ladders, leaning ladders and suspended ladders.</p>
	Descending lifelines 	 <p>Label</p>	<p>Evacuation devices that help evacuees descent automatically at a constant speed alternately and continuously under user's weight.</p>

EQUIPMENT AND TOOLS SUBJECT TO INSPECTION

Type	Item	Acceptance mark	Description
Alarms	Detectors or manual call points of fire detection and alarm systems 	 Label	Sensors Devices that automatically detect the occurrence of fire with censoring heat, smoke or flame caused by the fire, and send fire signal, etc., to a repeater, receiver or fire extinguishing equipment.
	Input/output devices 		Transmitters Devices to manually send fire signal to a receiver.
	Control panels 		Devices used in fire alarm equipment or gas leakage fire alarm equipment, that receive fire signals and inform persons responsible for fire protection about the occurrence of fire, gas leaks and operation of fire extinguishing equipment.
	Household disaster prevention alarms 	 Label or Marking	Fire alarm devices consisting from sensing and alarm modules that detect and announce the occurrence of fire in houses beforehand or at an early stage. Sensors are divided into two broad categories - smoke and thermal, according to the sensing method,.

Flow chart of mandatory inspection



Model Test

Model test (First test)

Applicant

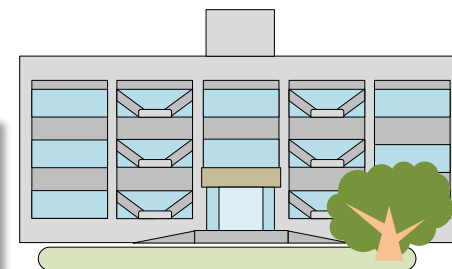


Application for testing



<Main Submissions>

- Test sample
- Design drawings
- Product specification

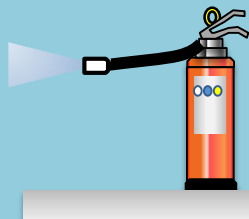


Japan Fire Equipment
Inspection Institute
or
Registered inspection
bodies

Example of model test (in the case of fire extinguisher)

Implementation of various tests

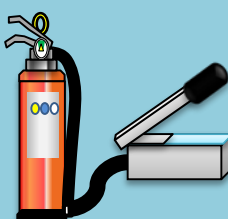
Discharge
test



Fire fighting
test



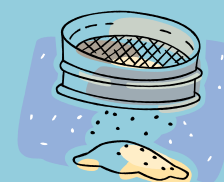
Pressure
test



Impact
test



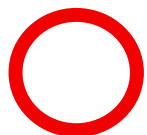
Physical
property test



Dimension
measurement



Result



To the second
test



Nonconformity
notice



Model Test

Model test (Second test)

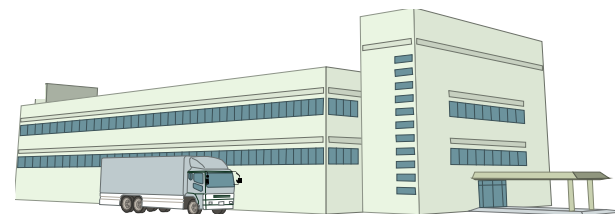
Examination of manufacturing process and quality management

Inspector



Conducted at the applicant's factory

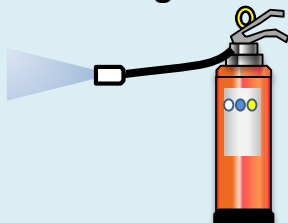
Factory



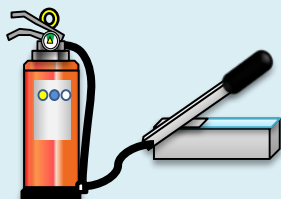
Example of the second test (in the case of fire extinguishers)

Implementation of various tests

Discharge test



Pressure test



Examination of manufacturing process

Testing and measuring equipment

Confirmation of the installment of necessary testing and measuring equipment used for lot inspection



CHECK

Manufacturing process

Review of the manufacturing process from receipt of materials for main components etc. to shipping



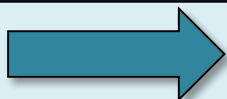
CHECK

Applicant's product test system

Review of the applicant's product test system in the manufacturing process



CHECK



Conformity notice



Nonconformity notice

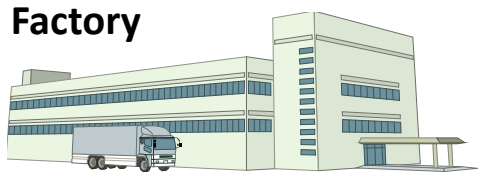


Mandatory Model Conformity Inspection toward product shipment

Mandatory Model Conformity Inspection / Lot Inspection



Visits and carries out at the applicant's factory

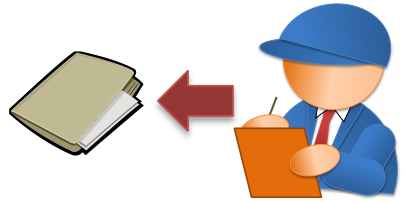


Examination of documents

Application form



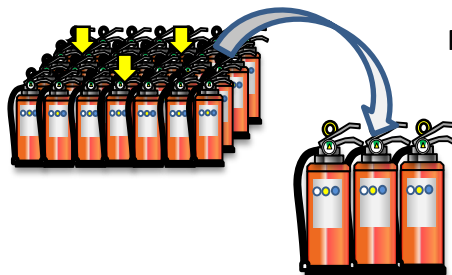
Examination of documents



Examination of self-test results, conducted by the applicant themselves

Preparation of sampling test

- 1. Confirm the quantity of each item subject to inspection
- 2. Extraction for sampling test
- 3. Marking of samples to prevent wrong-doing

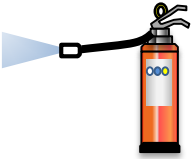


Pick-up at random

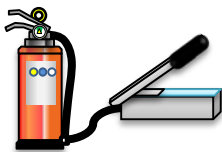


Sampling test through various inspections

Discharge test



Pressure test



Dimension measurement



Physical property test



Label of approval



- > Indication of approval
- > Product shipment



-> Lot failed




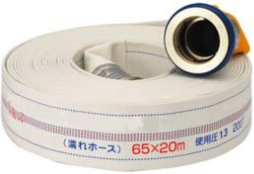



(Applicants investigate the causes of failure - to prevent recurrence.)



SELF-LABELING SYSTEM








EQUIPMENT AND TOOLS SUBJECT TO SELF-LABELING

Item	Acceptance mark	Description
<p>Power driven fire pumps</p> <div>  <p>Fire Pump Vehicle</p> </div> <div>  <p>Portable Pump</p> </div>	<div>  <p>Marking</p> </div>	<p>Pump equipment for fire fighting comprising a pump, an internal combustion engine or other mechanism for driving the pump having equivalent or better performance, and other necessary machinery and equipment. Fire pumps are divided into two types: fire pump vehicle and portable pump.</p>
<p>Fire Hoses</p> <div>  </div>	<div>  <p>Marking</p> </div>	<p>Flat hoses, shape holding hoses, hoses for large capacity foam water cannons and wet fire hoses.</p>
<p>Fire Suction Tubes</p> <div>  </div>	<div>  <p>Marking</p> </div>	<p>A conduit connected to suction inlet of a power driven fire pump used to transfer water.</p>



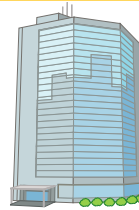
EQUIPMENT AND TOOLS SUBJECT TO SELF-LABELING

Item	Acceptance mark	Description
4 Coupling for Fire Hoses 	 Punch or Marking	Couplings attached to the ends of hoses or tubes, used to connect fire hoses or suction tubes to other hoses or tubes, fire pumps, etc. There are insertion type couplings, screw type couplings, and also insertion type and screw type couplings for large capacity foam water cannons.
5 Aerosol type disposable Fire extinguisher 	 Marking	Fire extinguishing devices to manually operate for discharging water or other fire extinguishing agents under pressure, with internal volume not exceeding 1 liter.
6 Electric leakage fire alarm devices 		Devices composed of transformer and receiver, that detect leakage current in warning circuit with voltage up to 600V, and inform person responsible for fire protection.

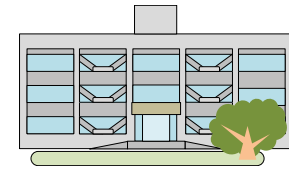


Flow Chart in Self-Labeling System

2. Reporting



**Ministry of Internal Affairs
and Communications**



**Japan Fire Equipment
Inspection Institute**

1. To check conformity
of product to the
standards

**Manufacturer
or
Importer**

3. Self model conformity
Inspection/Lot inspection



Allowed to outsource the conformity checks
described at 1&3 to Japan Fire Equipment
Inspection Institute.

4. Shipment of product



User



**Thank you very much
for listening.**

Fire Prevention Division, FDMA