

Introduction of Certification System for Waterworks Materials and Products of Korea

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& Products**

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I Legal Requirements for Waterworks Materials & Products

Cases of Defects & Damages from Waterworks Materials

(Waterworks Act)

- Waterworks materials and products should comply with both Performance Certification and Safety Standard Certification (KC Certification)

- Performance Certification
- Safety Standard Certification



Perforation of Corrugated Pipe



Distortion of PVC Pipe



Road Collapse from Water Leakage

※ The accidents due to material defects out of total 172 items of waterworks accidents occurred in Seoul Metropolitan City were 11 items representing 6%. (The Cases of Waterworks Accidents in Seoul, 2010)

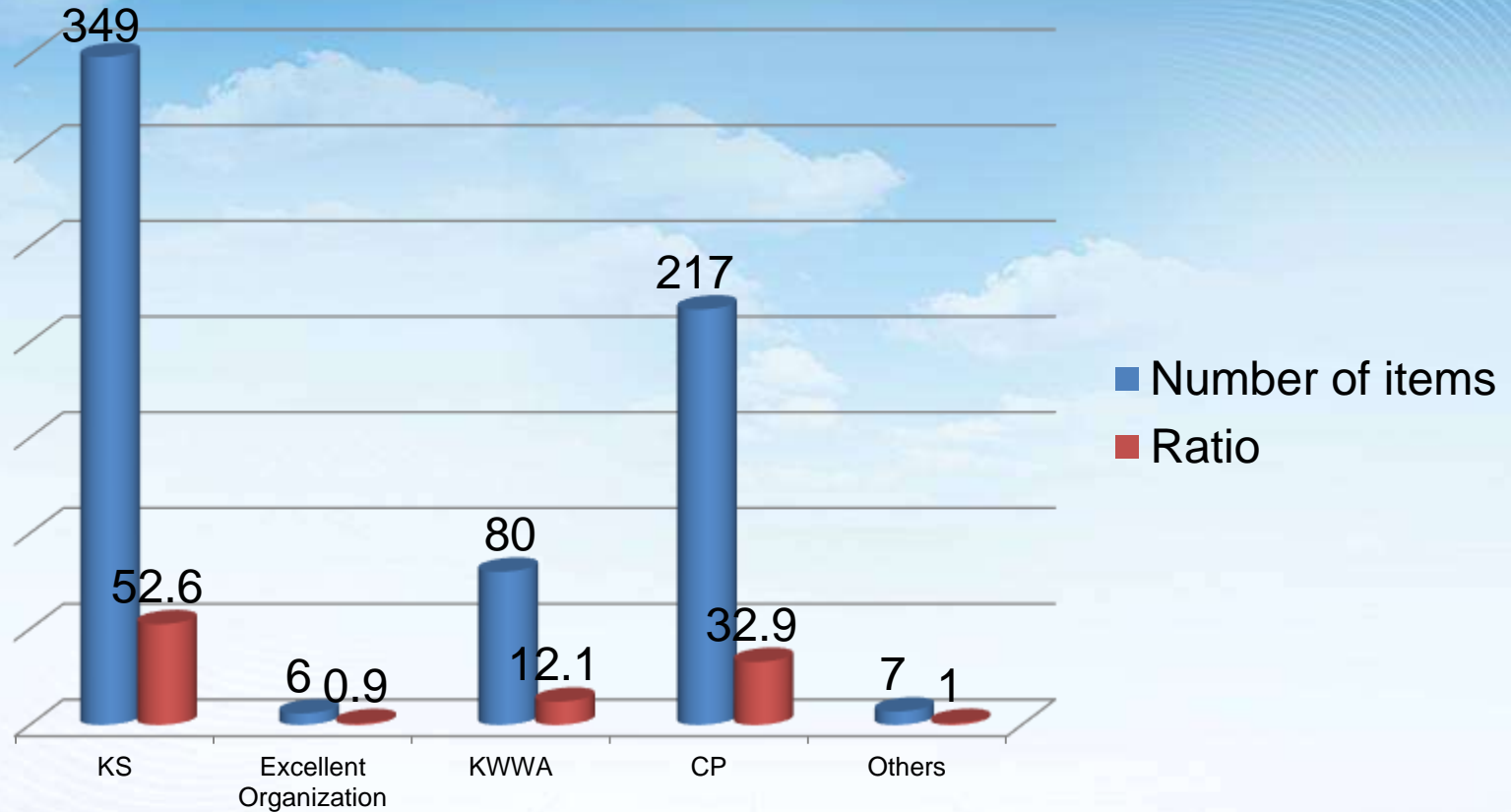
I Legal Requirements for Waterworks Materials & Products

Comparison of Performance Certification & Safety Standard Certification

Category	Performance Certification (Structural Safety)	Safety Standard Certification (KC Certification) (Public health Safety)
Pertinent Laws & Regulations	<ul style="list-style-type: none"> Article 14 of the Waterworks Act and Article 24-2 of the Enforcement Decree of the said Act (Use of waterworks materials and products) 	<ul style="list-style-type: none"> Article 14 of the Waterworks Act and Article 24 of the Enforcement Decree of the said Act (Sanitation & Safety Standard)
Main Agent for Administration	<ul style="list-style-type: none"> Ministry of Environment (Environment Mark) Ministry of Trade, Industry & Energy (KS, Excellent Organization, KWWA, NEP, NET) KWWA (CP Certification) 	<ul style="list-style-type: none"> Ministry of Environment (Entrusted to KWWA)
Applicable to	<ul style="list-style-type: none"> Items subject to administration by waterworks providers (Except for indoor water facilities) 	<ul style="list-style-type: none"> Waterworks materials and products which are used or installed for the supply of drinking water (Including indoor water facilities)
Target for Control	<ul style="list-style-type: none"> Water utilities providers (Users) Those who wish to install private waterworks 	<ul style="list-style-type: none"> Those who manufacture, supply, sell or import waterworks materials and products and their users.

I Legal Requirements for Waterworks Materials & Products

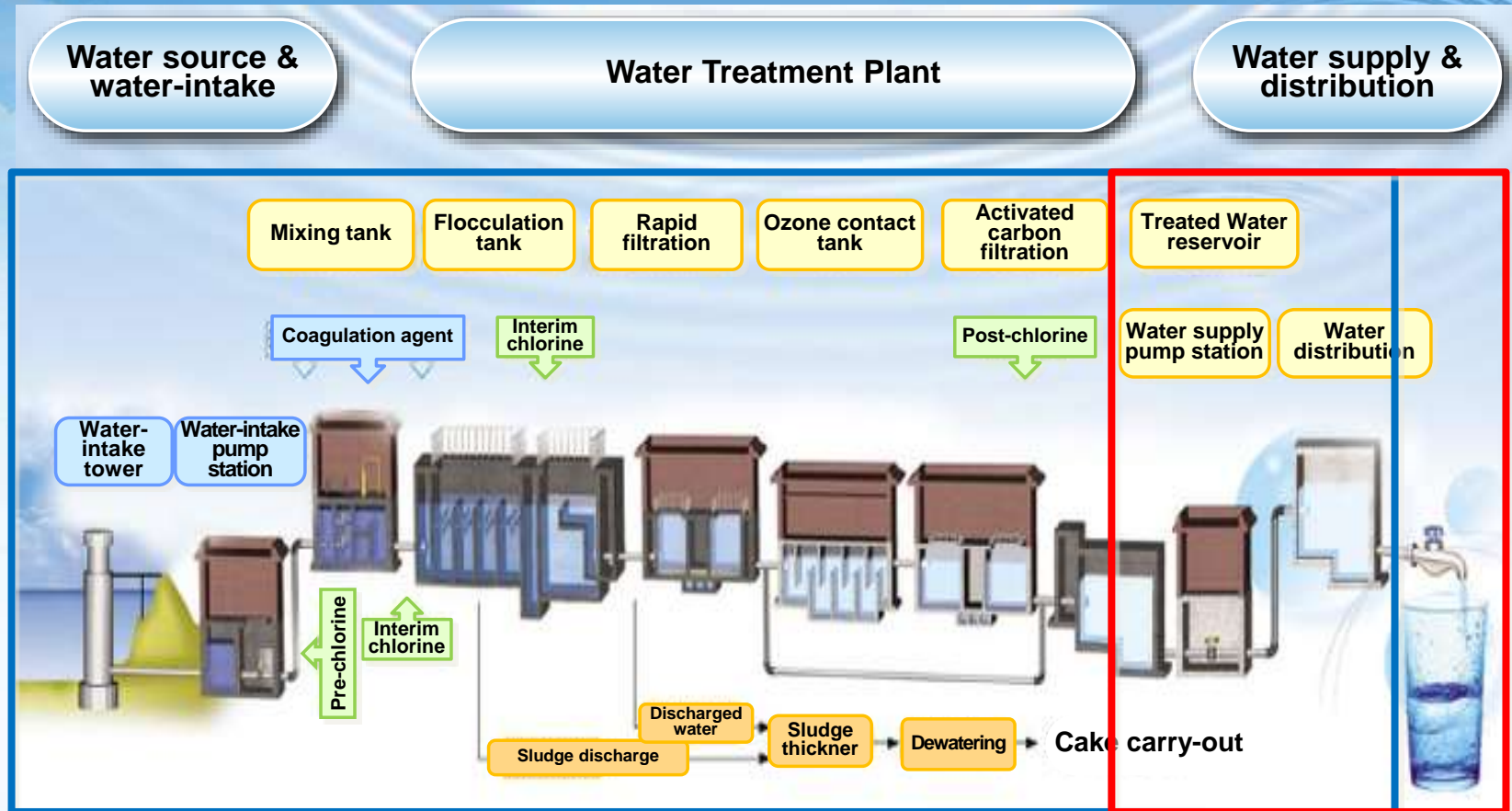
Status of Performance Certification (As of July 31, 2014)



※Others: NEP 3 items, NET 1 item, Environment Mark 3 items

I Legal Requirements for Waterworks Materials & Products

Scope of Certification for Waterworks Materials & Products



— Scope of Performance Certification

— Scope of KC Certification

II KWWA's Certification Systems

Performance Certification

Safety Standard
Certification

KWWA Certification

CP Certification

KC Certification



II KWWA's Certification System (Performance Certification : KWWA, CP)

Procedures for Performance Certification



- **Factory audit:** Evaluate whether factory is equipped with system for continuous and stable production of products
- **Product test:** Evaluate based on performance standard for the product for which Factory screening was passed.
- **Adjudgment Committee:** Final check for the compliance for the results of Factory screening and Product screening

II KWWA's Certification System (Performance Certification : KWWA, CP)

Status of Performance Certification

(Unit : item)

Category	Pipe	Valve	Pump	Flow meter	Others	Total
KWWA	35	18	-	-	27 ¹⁾	80 (8 products from overseas)
CP	72	102	3	11	29 ²⁾	217 (5 products from overseas)

- ▶ 1) Water meter box (3), Membrane module-No-outage product (24)
- ▶ 2) Water meter box (10), Strainer (4), Inspection fitting (2), Non-freezing tap-Wall panel (13)



<KWWA Certified Product>



<CP Certified Product>

II KWWA's Certification System (Sanitation & Safety Standard Certification : KC)

Procedures for KC Certification



Safety Standards

- ✚ **Sanitation & Safety Standards (Standards for 44 items of allowable harmful materials)**
 - ▶ Set elution allowable standards for 44 kinds of harmful materials including cadmium, mercury, lead and VOC
 - ▶ In the case of lead and arsenic, standards were reinforced according to the intensification of water quality standards for drinking water as of May of 2013.
- ※ **Standards : 0.005 mg/L and below → 0.001 mg/L and below**

II KWWA's Certification System (Sanitation & Safety Standard Certification : KC)

Status of KC Certification by Year

(Unit : item)

Category	Year				Total Accumulated
	2011	2012	2013	2014	
Total	324	657	382	98	1,461

Status of Certification by Product

(Unit : item)

Total certified items	Pipe	Valve	Faucet	Water-meter ·Flow meter	Pump	Others ¹⁾
Total	497	340	110	63	75	376

➡ 1) Paints (50), Water tank (104), Wall panel (27), Others (195)

Status of Certification by Country

(Unit : item)

Category	China	USA	Japan	Israel	Canada	Italy	Taiwan	Germany	Others
Total (96)	56	3	2	6	4	5	5	5	10

➡ 1 item each from India, Philippines, Indonesia, Vietnam, Denmark, Poland, Turkey, Switzerland, Thailand and Portugal

II KWWA's Certification System (Sanitation & Safety Standard Certification : KC)

KC Certified Product (Example)



Ⅲ Issues and Future plans

1. Exclusion of indoor water supply facilities from the list of items subject to Performance Certification

- ▶ Need to expand the items subject to certification to supply clean water up to faucet
 - ※ Most of waterworks materials and products are indoor water facilities products (885 items, 60.5%)

2. In the case of Safety Standard Certification, compliance will be judged based on extraction test only

- ▶ Consider to add material analysis(Ingredient analysis and contents) to the test method of Safety Certification

3. Increase in new harmful matters due to the development of new materials and new products

- ▶ Need to cope with the generation of new harmful matters from new products
 - ※ Extraction of EDC(Endocrine-disrupting chemicals)

Thank you!