



WORLD PLUMBING DAY

march 11, every year...everywhere

HEALTH ASPECTS OF PLUMBING FACTS SHEET

WORLD PLUMBING DAY | 11 MARCH 2010

The United Nations declared 2005-2015 the International Decade for Action “Water for Life”, setting a world agenda that focuses increased attention on water-related issues. This initiative is of extraordinary importance in a world where preventable diseases related to water and sanitation claim the lives of about 3.1 million people per year, most of them children less than 5 years old. Of these, about 1.6 million people die each year of diarrheal diseases associated with lack of safe drinking water and adequate sanitation.

By including access to a safe drinking water supply and sanitation in these international goals, the world community proposes 97 million additional people annually will have access to drinking-water services and 138 million additional people access to sanitation services through 2015. Working within the spirit of these initiatives the World Health Organization and the World Plumbing Council developed the “Health Aspects of Plumbing” publication noting that sustainable health, especially for children, is not possible without access to safe drinking water and basic sanitation facilities.

CLEAN WATER IS NOT A LUXURY

“Health Aspects of Plumbing” is a comprehensive and substantive examination of the design, installation and maintenance of effective plumbing systems. It recommends a number of plumbing system design and installation specifications that have demonstrated their validity over years of existence and discusses the microbiological, chemical, physical and financial risks associated with plumbing.

Published by the World Health Organization and the World Plumbing Council, the book is dedicated to the achievement of the best possible plumbing practices to ensure the highest health benefits from the use of sound plumbing practices. It is a tremendous resource for administrators and plumbers, especially those in countries or areas in the early stages of introducing effective plumbing systems.

The document is also available in Mandarin.

The publication is 129 pages with 10 figures, 15 tables and five case studies, including some of the following topics:

- Basic principles of safe drinking water supply
- The role of plumbers in risk assessment
- Codes of practice for plumbing
- Training and registration of plumbers
- Standards for materials used in plumbing systems
- Design of plumbing systems
- Storm water drainage



- Wastewater use

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CASE STUDY

The SARS epidemic in Hong Kong demonstrated that the Amoy Gardens plumbing and ventilation systems were compromised over time, with inferior components (P-Trap and mounting bolts) allowing the infectious agent to spread throughout the building. Although it is not certain that this SARS outbreak could have been prevented, it is reasonable to conclude it might have been if a series of plumbing safeguards were met during a long progression of steps leading up to the catastrophic failure.

The key elements from this epidemic that are addressed by the plumbing industry worldwide:

- **DESIGN:** It all begins with the design of the product itself. A trained engineer will know which materials are viable options for the production of a P-trap and call for these specifications in his design.
- **PRODUCTION:** Next is the manufacturer. If there is an ISO 9001 Quality Management System in place, audited regularly by an accredited third party body, the manufacturer is likely to recognize a deficient material being used in a product and make the correction before the faulty product can go to market — in this case, the bolts that rusted and compromised the integrity of the sewerage system.
- **STANDARDS TESTING:** Similarly, this defect could have been caught during testing at a properly accredited product-testing laboratory. Standards dictate the allowable materials, design, function, etc. for a given product. If the product standard calls for galvanized bolts, for instance, any product not using the specified bolts would not pass testing to show compliance with the applicable standard(s).
- **PRODUCT CERTIFICATION:** Without meeting the required standards, the product cannot be certified and listed by a third-party certification body suitably accredited to grant Marks of Conformity to products. Authorities Having Jurisdiction (a city's building inspector, for instance) look for these Marks of Conformity when determining which plumbing products they will allow for installation within their municipality.
- **CODES:** The adoption of building codes within a municipality goes a long way toward ensuring the safety of a city's residents from system failures such as the one at the Amoy Gardens.
- **INSTALLATION:** A workforce highly trained and educated to the existing code language is essential to the proper installation of a plumbing system. If the plumber who installed the P-trap at the Amoy Gardens was properly certified to perform this work, it is quite possible he would have recognized the potential for failure in this particular product.
- **INSPECTION:** In the same vein, a similarly certified plumbing and mechanical inspector might have red tagged this installation during his code-dictated on-site inspection of the installer's work. This red tag could have required the installer to remove the faulty P-trap and replace it with the proper part before the plumbing system could be approved as being compliant.



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- **MAINTENANCE:** Over the life of a plumbing system, periodic maintenance is required. The chances of the system continuing to function in the safest manner possible grow exponentially when the person performing that maintenance is trained professional plumber. During routine maintenance of the building's plumbing system, the failed P-trap might have been discovered and repaired before the SARS Coronavirus was introduced to it.
- When all of these steps work in concert with each other, it drastically reduces the likelihood of the type of failure that facilitated the spread of the SARS virus in Hong Kong. In developing nations, many of these steps are often bypassed, with increased health risks illustrated by statistics; for example, as many as 7.5 percent of deaths in India are attributed to water and sanitation related causes, according to statistics from the World Health Organization — a staggering figure in a nation of 1.1 billion people.
- World Plumbing Day seeks to provide additional awareness of these goals and how tools such as “Health Aspects of Plumbing” contribute toward reaching these humanitarian goals.
- *Safe, clear drinking water and basic sanitation is possible in any nation, big or small, when simple, sound plumbing practices are adopted.*
- **Contact www.worldplumbing.org to download your copy of Health Aspects of Plumbing today.**