

The History of Plumbing...so far!

The creation of modern plumbing with its delivery of clean water and removal of waste is credited with being one of the single most important inventions ever. Toilets, and the delivery of clean water into homes, are widely acknowledged to have saved more lives than anything else in the world, including modern medicine and vaccines.



Roman aqueducts carry 1.2 billion liters of water a day a distance of 57 miles in order to bring fresh water to Rome.

1700 BC

Plumbers construct an elaborate system of sewage disposal and drainage, the first of its kind, and create the first flush toilet in Crete.

Boston builds the USA's first city waterworks system to be used by fire brigades. *Historical Note: most of the pipes at this time were built from hollowed out trees.*

312 BC



Queen Elizabeth I installs the first flushing toilet in England, invented by her godson Sir John Harrington... hence the nickname, "the John".



Philadelphia becomes the first city to switch entirely to cast iron pipes to create their intricate new system of water delivery, making them a global leader in plumbing.

1596

1652

Alexander Cummings receives the first patent for a flushing toilet.

1804

Boston's Tremont Hotel offers indoor plumbing; the first hotel to do so.

Cholera outbreak occurs due to a contaminated well in England.

1829

England passes the National Public Health Act which includes notes on water safety and will be adapted for countries around the globe.

Chicago becomes the first large American city to build a comprehensive sewer system.

1848

The New York Metropolitan Board of Health forms in response to a growing demand for government study into the cause of serious health outbreaks and rapid spread of disease. Their studies will confirm the link between contaminated water and the spread of disease leading to a call for better sanitation.

1854

Louis Pasteur, the "father of microbiology" and the inventor of the vaccine, uncovers the link between bacteria and disease.



Private homes begin to see the first installation of water heaters; although understanding on proper temperatures and safety guidelines will follow much later.

1860

Chicago amazes the world with the installation of the first city water tower.

1868

High Tank water closets enter the market using a whopping 10 gallons of water per flush!



Today's 'National Association of Plumbing, Heating, Cooling Contractors (PHCC)' then known as the 'National Association of Master Plumbers,' holds their first official meeting.

1869

The world's first drinking water treatment systems are built in Massachusetts to reduce turbidity and microbial contamination.

Tank type water closets emerge onto the market using 5 to 7 gallons of water per flush, reducing previous water consumption by 30-50%.



1870

William E. Sloan invents the flushometer valve that uses pressure from the water supply system to discharge water for waste removal from toilets and urinals as opposed to using gravity.

1883

A tragic outbreak of dysentery, leading to nearly 100 deaths during the World's Fair in Chicago is traced to a faulty plumbing system that leaked contaminated water.

1885

Alfred M. Moen invents the single handle mixing faucet.



The International Association of Plumbing and Mechanical Officials (IAPMO) is founded. They begin writing a model code to protect the health of people from inept plumbing practices.

1889

Paul C. Symmons invents the first compensating shower valve to guard against thermal shock.

The Sanitary Brass Institute and the Tubular Plumbing Goods Institute combine to form the Plumbing Brass Institute (PBI).

1890

1954 - Plumbing Brass Institute's (PBI) first president, Arthur H. Goepel, appoints the first plumbing standards committee for fixture fittings. *Historical Note: PBI, later renamed Plumbing Manufacturers Institute, is today's Plumbing Manufacturers International (PMI).*

PBI gets approval for the standard on fixture fittings known as ANSI A112.18.1 helping to regulate industry standards.

1896

The US passes the Safe Drinking Water Act.

American Society of Sanitation Engineering (ASSE) issues standard ASSE 1016 for compensating shower valves to help increase safety.



1920's

The first 3.5 gallons of water per flush (gpf) toilet is introduced; previous versions used between 5.0 to 10.0 gpf or more!



PBI changes its name to Plumbing Manufacturers Institute (PMI).

1926

USA amends the Clean Water Act to expand on the Federal Water Pollution Control Act of 1948.



California issues a new law requiring toilets to use no more than 3.5 gpf.

1926

The National Sanitation Foundation (NSF) forms NSF 61 joint committee with the American National Standards Institute (ANSI) to test all fixtures that come in contact with potable water.

The American Society of Mechanical Engineers issues new standards conformance to ASSE 1016 for compensating shower valves to create harmony in the industry and in North America.

1933

The NSF/ANSI 61 standard is officially published.

1937

NSF/ANSI-14 is adopted as a standard regulating plastic piping components.

Congress passes the Environmental Policy Act of 1992 (EPAct'92) to conserve water mandating maximum water consumption for toilets at 1.6 gpf, urinals at 1.0 gpf, faucets at 2.5 gallons per minute (gpm) and 2.5 gpm for showerheads. President George H. W. Bush signs it into law.

1939

The US Environmental Protection Agency (EPA) promulgates the Lead Copper Rule. The first domestic set of lead-free plumbing products are introduced.

1954

Building Officials and Code Administrators (BOCA) Plumbing Code now makes shower compensating valves required.

1954

EPAct '92 officially goes into effect.



1969

PMI reorganizes into a focused, self-managed, independent association.

1973

PMI signs a MOU with the US Department of Commerce.

1974

PMI signs a Memorandum of Understanding (MOU) with the UK's Bathroom Manufacturers Association (BMA).

1974

California enacts AB 1953 which mandates lead content in plumbing fixtures be <0.25%.

1975

The World Health Organization publishes a guide, *Health Aspects of Plumbing*, noting that "sustainable health, especially for children, is not possible without access to safe drinking water and basic sanitation facilities."



1975

PMI signs a MOU with Plumbing Products Industry Group of Australia.

1977

NSF/ANSI 61 adds Annex F further reducing the allowable lead content in potable water fixtures.

1978

PMI launches www.SafePlumbing.org to provide safe, reliable information about the plumbing industry.

1978

California enacts PMI-sponsored SB 1334 to add 3rd party certification to water conserving plumbing fittings, and SB 1395 requiring state testing and evaluation.

1978

PMI signs MOU with the Canadian Institute of Plumbing and Heating (CIPH).

1988

EPA WaterSense issues an official specification for urinals.



1988

EPA WaterSense issues an official specification for showerheads.



1989

NSF/ANSI 372 is published, issuing new standards for testing procedures to test for lead in potable water system components.

1989

PMI spearheads introduction and passage of "Reduction of Lead in Drinking Water Act" (P.L.111-380) to harmonize certain state lead laws by reducing lead content in certain plumbing fixtures from 8% to a maximum of 0.25% weighted average, and provide a 36 month implementation period. President Obama signs the law to take effect January 4, 2014.

1992

NSF implements the Dezincification Standard.

1992

Georgia signs a comprehensive water efficiency law, the "Water Stewardship Act" (SB 370), which requires higher efficiency standards for toilets, faucets and urinals. It is the first state to require sub-metering of multi-unit residential, commercial and industrial buildings, effective July 2012.

1992

PMI efforts at state harmonization continue as Maryland and Vermont pass laws that reduce the allowable lead content of plumbing fixtures.



1994

PMI signs a MOU with the American Rainwater Catchment Association (ARCSA).

1994

EPA WaterSense releases a PMI supported specification on commercial pre-rinse spray valves.

1994

The Federal Law "Reduction of Lead in Drinking Water Act" reducing lead content in plumbing fixtures from 8.0% to maximum 0.25% weighted average goes into effect.



1998

President Obama signs the "Water Resources Reform Development Act" to address water infrastructure issues.

1998

In consultation with PMI, Colorado adopts high efficiency plumbing standards (SB 14-103), the "Phase in High Efficiency Water Fixtures Options," which requires the use of WaterSense fixtures for all tank-type toilets, urinals, faucets and showerheads. Colorado Governor signs the law, effective September 1, 2016.

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Present

International
Emerging Technology
Symposium

PMI co-convenes the 4th International Emerging Technology Symposium along with ASPE, CIPH, IAPMO, Mechanical Contractors Association of America, Plumbing Contractors Association, PHCC, United Association and the World Plumbing Council.

PMI continues to work with local, state and federal policymakers, industry leaders and professionals to achieve their vision of "Safe, responsible plumbing. Always."

