CODES MUST BE RESPONSIVE TO CURRENT AND FUTURE HAZARDS

CODES MUST BE RESPONSIVE TO CURRENT AND FUTURE HAZARDS

Is it Time to Stand for Those Who Protect the Health and Safety of the Nation? by Jay Peters, Codes and Standards International

In one of my recent articles, "Building Products, They Comply with Code But Are They Safe", I insinuated that PVC and some plastics could become the next asbestos or lead and caught some flak from friends in the plastic piping industry. Plastics are used in children's toys, food containers, furnishings, finishes on furniture, countertops, cabinet pull handles, toilet seats, tubs and shower enclosures, plumbing piping, ductwork, cabinetry, carpet, electrical wiring, insulation, drinking cups and utensils, televisions, shelving, flooring and it goes on and on.

If you check history, you will find that lead and asbestos products followed the same path, and both were even used to transport drinking water. A recent study found that the average person ingests the equivalent of the weight of a credit card in plastic every week, mostly via drinking water. Only time will tell if there are major health effects, but there are those not willing to wait for history to play-out.

Restricting The Use Of Plastic Pipe

In 2019, the United Association of Plumbers and Pipefitters (UA) and the International Association of Fire Fighters (IAFF) released a joint statement in support of restricting the use of plastic pipe (PVC and ABS) in specific types of buildings, including healthcare facilities and high-rise residential occupancies. Although this may send shock waves through some in the plumbing industry, or seem an inconvenience to others, they see it as a matter of life and death for their members. Their individual press releases can be found at IAFF.org or UA.org.

> Plastic pipe emits toxic gases when burned and requires more complex firestopping systems in fire-rated construction than non-combustible pipes. If improperly installed or inspected, these systems allow fire to spread more easily.

The IAFF members, made up of mostly first responders, are getting cancer at an unprecedented rate. The toxic byproducts of plastics, especially PVC, are some of the deadliest when burned. Not only are these byproducts ingested through inhalation, but they are also absorbed through the skin. Can the cancer be pinpointed to PVC pipes in buildings? Probably not. In fact, there is so much plastic in these specific buildings that it may be impossible to place any blame on piping. However, the issue really doesn't lie in placing blame.

The real issue is in controlling that which can be controlled through wise design choices and appropriate codes and standards. In this case, it seems to make sense to consider the opportunity to address the piping as a controllable addition to the total plastics fire load of the building. After all, while wall coverings, furnishings, etc. may change over time, the piping itself in these piping-intense occupancies will remain. Just as air-conditioning system materials, installation, and repair have been changed to address their likely small role in the overall issue of ozone depletion and climate change, there is benefit in solving big problems by tackling the small problems we can control.

The codes must be responsive not only to information available when products are submitted for inclusion and acceptance, they must also be responsive to hazards and risks that arise long after those adoptions occur.

The codes can and should play a large part in this responsible control. The codes must be responsive not only to information available when products are submitted for inclusion and acceptance, they must also be responsive to hazards and risks that arise long after those adoptions occur. Many refrigerants, lead, asbestos, polybutylene and other materials and systems were approved and used widely. Later, they were deemed unsafe, phased out and every trace was erased from all construction codes. The codes can always be safely and easily corrected after the product was approved.

About The Joint Statement

A colleague said, "I don't agree with their position. They lost that battle a long time ago and plastics are allowed in the plumbing codes. This is just an effort by lobbyists to sell more products and get rid of plastics." Yes, the

plastic and chemical industry was relentless and successfully lobbied to remove many restrictions in the codes decades ago. If you ask the fire fighters and first responders that are losing their brothers and sisters every day, that was a mistake. A mistake they believe needs to be fixed. If we applied the same logic to asbestos and lead, we'd still be installing both of those today. In those cases, safety experts had no problem updating the codes with safer provisions. No product is guaranteed a lifetime of acceptance because it made its way into the code. There are always opposing sides, and this is no different. Which side do you want to stand on? No product is guaranteed a lifetime of acceptance because it made its way into the code. If that was the case, we'd still be installing lead and asbestos today.

> **"NO PRODUCT IS GUARANTEED A LIFETIME OF ACCEPTANCE BECAUSE IT MADE ITS WAY INTO CODE"**

Although the water, drain, waste and vent piping may be a small percentage of the overall plastic load in most buildings, there are miles and miles of it in the specific buildings referenced in the statement. After construction is completed, people bring the plastics in from everywhere, including the one-time use items, such as plastic bags, bottles, packaging, containers and utensils. It is estimated that approximately 40 percent of the plastic used in society is in the form of single use. The difference is that piping systems are intended to be a permanent part of the critical internal systems of the building and remain in place for its lifetime. Although it may be durable, plastic piping does not yet have the extended track record (about 50 years) that noncombustible materials have proven (about 100 years). The materials for this type of fixed system can be controlled during the building code and standards development process as well as during installation. The plastic load that comes in after construction is nearly impossible to regulate.

Everything You Buy Today Is Laced With Plastic

According to a recent CBS News report, the biggest danger to today's firefighters has morphed from the flames they are fighting to the smoke those fires produce. According to the IAFF, almost two out of every three firefighters who died in the line of duty, died of cancer since 2002.

In the article, Boston Fire Chief Joseph Finn said, "We have about 13 members right now who are battling various stages of cancers, active members." Since 1990, Finn said cancer has killed more than 200 of his colleagues. He was asked to compare it to the number of firefighters who die in the fire itself, he said "it certainly outnumbers it at least ten, 20, 30 to one". He went on to say that scientists believe it may be linked to another change in modern building materials. "Everything you buy today is laced with plastic," he said. "So, once they decompose and they combust, they're going to give off all these toxins and carcinogens that are really deadly to firefighters."

According to Boston Fire Commissioner Finn, "Everything you buy today is laced with plastic, so once they decompose and they combust, they're going to give off all these toxins and carcinogens that are really deadly to firefighters"

In previous articles, I have promoted the concept that buildings should be constructed in a holistic manner. We should be cognizant of an overload of materials that could have a detrimental effect on the health and safety of the public and the environment when taken into account as a total load. In the joint statement released by the UA and the IAFF, they also take a measured, holistic approach by not calling for an all-out ban on plastic piping, but rather promoting responsible restrictions of plastics in the codes for specific piping intense occupancies. ***Instead of asking "why," maybe the question should be "why not?"*** □

Contact the author:
Jay@BuildingCodesAndStandards.com

About the author: Jay Peters has been in the industry for almost 40 years as a licensed journeyman plumber, refrigeration journeyman, sheet metal installer and multi-state contractor. For more than a decade he worked for the two largest code organizations as Executive Director of plumbing, mechanical and fuel gas at the International Code Council (ICC) and Senior Director of Codes and Education at the International Association of Plumbing and Mechanical Officials (IAPMO). Currently he is the principal advisor at Codes and Standards International. His articles have appeared in World Plumbing Review, Plumbing Engineer, IAPMO Official, Plumbing Africa, PM Engineer, Contractor, Reeves Journal, National Environmental Health Association Journal, ICC Building Safety Journal and more.

A JOINT STATEMENT BY THE
INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS
AND THE
UNITED ASSOCIATION OF PLUMBERS, FITTERS, WELDERS AND SERVICE TECHS

1750 New York Avenue, NW
Washington, DC 20006-539

JANUARY 1, 2019

Three Park Place
Annapolis, Maryland 21401

Protecting the Public, Environment, Workers, and Fire Fighters

The American Labor Movement has always stood in the forefront in advocating for worker and public safety. Reducing safety in model plumbing codes negatively impacts the health and safety of the public, construction workers and first responders. During fire events, first responders and building occupants suffer increased health risks from toxic smoke and gases.

All buildings should require the installation of safe, recyclable, non-combustible, and sustainable piping materials for plumbing systems to protect the health and safety of first responders, building occupants and the environment.

The Model Plumbing Codes barred plastic plumbing pipes from high rise buildings for decades but have been weakened by special interests which jeopardizes health and safety. Cancer rates amongst fire fighters have dramatically increased due to exposure to toxins from plastics and other building materials used in construction.

Although plastic piping (PVC, CPVC, ABS) is appropriate for some uses, the codes should prohibit the installation of plastic piping for drain, waste, and vent (DWV) plumbing in hotels and residential buildings greater than two stories in height.

It should also prohibit plastic pipe in critical patient occupancies such as hospitals, nursing facilities, high rise residential structures, and healthcare facilities.

Plastic pipe not only emits toxic gases when burned, but requires more complex firestopping systems in fire-rated construction than non-combustible pipes. If improperly installed and/or inspected, these systems allow fire to spread more easily.

Plastic water piping also leaches hydrocarbons and chemicals into drinking water. A recent analysis of the many plastic pipe material variations (PE, PEX, HDPE, PP, CPVC and PVC) identified 163 leachable substances and 74 of these are not understood or regulated.

Off gassing from plastics and the adhesives used with plastic piping pose long term health risks to workers exposed to these products during construction and to the occupants of these buildings.

Alternatives that are noncombustible, sustainable, durable, and recyclable should be considered in lieu of plastic materials.

The International Association of Fire Fighters (IAFF) represents over 310,000 professional fire fighters, fire officers and EMS Providers across North America.

The United Association of Plumbers, Fitters, Welders and Techs (UA) represents over 340,000 members engaged in plumbing, the pipe industry, HVAC, welding and related fields.

Harold A. Schaitberger
General President,
International Association
of Fire Fighters

Mark McManus
General President
United Association of Plumbers, Fitters,
Welders and Service Techs