ASK THE
INSPECTOR

BROUGHT TO YOU BY AMERISPEC OF CANADA

Plastic water distribution plumbing used in residential construction has received bad press in recent years. What is the real story regarding plastic water pipes?

Plastic water distribution piping has been installed in hundreds of thousands of homes in Canada since the mid 1970's. Several common types of plastic water distribution plumbing materials include polyethylene, polyvinyl chloride, chlorinated polyvinyl chloride and polybutylene. Polybutylene is a plastic plumbing material that is non-rigid, usually gray and occasionally black in colour that was primarily installed in homes in Canada through the 1980's. Polybutylene piping has received negative media attention in the last several years due to concerns over problems with leakage and resultant property damage although is still approved for use today by many plumbing codes. Based on a review of literature and publications regarding the primary causes for leakage, reasons for the leaks are diverse and vary from inherent problems with the material to improper installation techniques. There are many potential causes that have been identified, however, several of the more common reasons for leakage include:

- Failure of the acetal plastic insert fittings that were historically used as polybutylene pipe connectors, elbows, T-fittings, etc. The acetal plastic insert fittings are usually gray and occasionally white in colour and are known to have leaked due to deterioration from chlorine exposure and from hairline cracking (due to over-tightening of fasteners) during installation. Given the problems with acetal fittings, brass and copper fittings are commonly used today.
- In some cases, leaks are caused by improper installation of polybutylene pipe in high temperature locations, such as locations too close to water heater or furnace flues, where it is not recommended for use. In addition, improper twisting/bending of polybutylene pipe during installation can create stress on the polybutylene pipe and connections, causing cracks and leakage. Newer, plastic pipe known as PEX (cross-linked polyethylene) is now available, which has more resistance to stress cracks than polybutylene pipe.
- Inherent properties of polybutylene pipe systems have also been identified as a potential source for leakage. Some published literature indicates that high levels of chlorine in the water supply may contribute to deterioration and potential leakage of polybutylene pipe systems.

Remedies for repairing leaking polybutylene piping systems have ranged from replacement of acetal plastic with metal fittings or replacing damaged piping. In some cases, homeowners are opting for complete replacement of the piping with copper materials, to reduce potential for future problems.

It is important to note that there are ongoing class action legal proceedings occurring in Canada for past or present owners of properties with polybutylene plumbing systems. For further information regarding the legal proceedings, look up www.pbsettlement.ca on the internet.

Are there any health concerns associated with lead supply/distribution piping?

Water mains constructed of lead were installed in City/Town streets and for supply piping to houses until the 1950's. According to many health organizations, ingestion of lead can have adverse health effects. Most lead water mains and supply piping installed in City/Town streets has been replaced in recent decades. Some municipalities completed lead pipe replacement programs in City/Town owned streets and offered home owners the option to have lead services between the street and the house replaced at a discounted price, however, numerous lead services are still installed. For information regarding whether water mains and supply piping in a municipal street is constructed of lead, we suggest consulting with your municipality to discuss whether such information is available in their files.

Lead supply piping that is installed between the street and a house can typically be identified by first finding the location where the water supply pipe enters the home (typically in the basement), and gently scratching the surface of the pipe with a screwdriver. If the pipe is a grey shiny colour that seems soft when scratched (a screwdriver often leaves an impression in the pipe), it is probably made of lead. For comparison, the other major types of metal pipe materials in older homes are usually copper (which is distinguished by it's brown colour and sometimes blue/green hues) or galvanized (which is usually a dull grey colour that is harder than lead).

If lead piping is observed in a home and/or if a homeowner is interested in measuring for the potential presence of dissolved lead in the supply piping, water samples can be properly collected and submitted to a qualified laboratory for analysis to verify the presence or absence of dissolved lead.-It is important to note that lead concentrations contained in a water sample are representative of one point in time only and will very likely fluctuate with repeated sampling activities. If lead concentrations are repeatedly detected above published allowable levels, a qualified specialist should be contacted to discuss further assessment and potential remedies.

Are there any problems with having galvanized distribution piping in my home?

alvanized supply and distribution piping was historically installed in homes prior to 1950. These pipes commonly rust or corrode from the inside out, often reducing the pressure or restricting the flow of water or worse yet, leaking and creating flood damage to a home. Life expectancies for galvanized plumbing are generally on the order of 40-50 years. Given that many galvanized pipe installations have recently reached their estimated life expectancies, the risk of a pipe leak occurring and the potential for flood damage is high. Some insurance companies are now refusing to provide homeowner's insurance on houses with this type of plumbing, particularly for new policies.

Contact Us: