

PB PIPING (Polybutylene Piping)

What is Polybutylene Piping?

Polybutylene is a form of plastic resin that was used extensively in the manufacture of water supply piping from 1978 until 1995. Due to the low cost of the material and ease of installation, polybutylene piping systems were viewed as "the pipe of the future" and were used as a substitute for traditional copper piping.

What does PB pipe look like?

Most commonly grey in color, but it can also be white, silver, black or blue. Blue PB is used primarily outdoors and should only be used to carry cold water.



Usually stamped with the code "PB2110"; flexible and sometimes curved, unlike rigid piping materials such as copper; not used for waste, drain or vent piping; ½" to 1" in diameter

Is all plastic pipe PB?

No there are many types of plastic piping materials currently in use. They come in a variety of colors black, white, blue, red and brown are just a few. Materials may be PVC (white) CPVC (yellowish) or PEX (blue, red, white, brown)



What are the Concerns with PB Pipe?

Polybutylene is alleged to be prone to premature failure and resulting leaking.

I heard that there was a class action lawsuit centered around PB piping?

Yes, claims alleging defects in "Polybutylene plumbing systems." Were made. The complaints, centered almost entirely around products made from plastics other than Polybutylene, produced by other raw material suppliers for the manufacture of pipe fittings. These companies were co-defendants in this litigation

The stated "Polybutylene plumbing systems" mentioned in the US legal case were pipes made from



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Polybutylene joined to plastic fittings made from acetal resin. Premature failures were caused by the use of acetal fittings and poor joint assembly techniques. Acetal resin is not suitable for use with hot water having high chlorine concentration and results in accelerated failure.

Can the Piping itself fail?

All materials have a finite life and the environment in which they are used can impact the performance of the material and lead to premature failures. Copper piping long considered the “Standard” is susceptible to corrosion in systems with acidic water. There is evidence that suggests that oxidants in the public water supply – like chlorine – can make the PB pipes brittle and prone to premature failure.

What other conditions can lead to failure of PB piping systems?

One of the most overlooked and difficult to identify conditions is improper installation by untrained individuals. Because plastic pipe such as PB is easy to install it requires less skill and thus training is limited which leads to mistakes.

Improper storage of the material is another factor. Most plastic piping is

susceptible to ultra violet light from the sun. Storing it outside exposed to sun light for long periods of time can lead to premature failures.

Installation of plastic piping too close to heat sources, very hot attics or a hot water tank is another contributing factor to premature failures. Again, following proper installation guidelines can avoid these situations.

The truth is that almost always the materials take the blame for improper installation.

Has this material been banned for use?

There is no U.S. ban on the use of Polybutylene for piping systems, but manufacturers have made the decision not to sell Polybutylene materials or products in North America in view of the outcome of the previous US litigation process.

Is this material still used and if so where and for how long?

Polybutylene has been used for over 50 years in heating piping applications and for over 30 years in drinking water systems in other parts of the world

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The Polybutylene Piping Suppliers Association claims that no such experience of failure has occurred in the last 50 years that Polybutylene plumbing products have been used in Europe and Asia. They claim that the combination of pipe and proper fittings produce a sustainable system and is considered of paramount importance for the long-life reliability and performance of piping systems. It appears that in the United States during the 1980's and 1990's the same stringent emphasis was not placed on the combined compatibility and performance of pipe and fittings as it was elsewhere

Is the lawsuit still open and can I get the PB piping replaced?

The original lawsuit Cox vs Shell Oil was settled and compensation for replacement for home owners with the plumbing installed from Jan. 1, 1978 to July 31, 1995." So, this suit is closed'



However, a newly filed suit (Hurt vs. Shell Oil) seeks to reopen the case. It's too early to tell what will happen with this suit as it was just started in 2018.

Why did home inspector include a statement about polybutylene piping in the report when it was not leaking?

The home inspectors' job is to provide you with a better understanding of the home you are purchasing. This means that sometimes they will not only identify defects and items in need of repair or replacement, but they will also point out conditions that they feel you should be made aware of.

In fact, the NC Home Inspector Licensing Board has provided suggested language for Polybutylene piping and encourages home inspectors to use this specific language when ever they encounter the material.

My home was built in the mid 90's and copper crimp ring and fitting where used to join the PB pipe, is this okay?

As many as 6 million houses and mobile homes built from 1978 to 1996 used some type of polybutylene piping, according to industry estimates, and many still have it. Later in the life cycle of the material improvements were made with the fittings and crimp rings.

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This along with increased emphasis on training resulted in higher reliability and less failures at the fittings and connections. However, by this time the materials reputation had been damaged and by 1996 its use was phased out.



There are, however, still questions about the durability of the piping material and as such it is considered less reliable than other piping materials.

What should I do?

Your professional home inspector is looking out for your best interest and has made you aware of a potential condition that may exist in the home you are purchasing.

You should take the time to do your own research on the material and reach your own informed conclusion. There is a lot of information available on this topic some is well balanced, and others are alarmist.

You may want to consult with several qualified plumbers that you know, and trust will provide you with an honest answer based on their experiences.

You should be aware that some of the recommendations may be based upon perceived liability and most plumbing professionals do not want to accept the liability for predicting future performance of a questionable product or for future failures of that product and will most likely make the safest suggestion and recommend possible.

Ultimately, you must decide what level of risk you are willing to accept, and what you are comfortable with.

Summary

Polybutylene piping may not be inherently bad but there is no guarantee that it or any other piping material won't fail and result in a leak or damage to your home. Evidence suggests that the reliability of this product is less than expected and it has a higher probability for failure than other more traditional materials. However, the extent of this reliability factor has not been determined. It has been pointed out that many homes with this material are now approaching 30-40 years with no known problems but, this as with so many other things in life is not a guarantee.