

## **Plumbing Africa: The case for Polymer pipes in hot and cold water applications**

KWD-globalpipe, 2009-11-21. (**Plastics pipes contra copper pipes**)

A staff reporter of the "Plumbing Africa Magazing, May 14 2009, wrote this article. He is telling about pros and cons in using polymer pipes instead of copper pipes. It is entertaining to read but it also tells a lot about the African plumbing market. So just read it and form your own opinion:

I remember at an IOPSA presentation during **2006** when it became obvious that **polymer pipe systems were going to take over from copper pipe systems** for most common **hot and cold water applications**, and that this would match the pattern of almost all **plumbing markets globally**, a very agitated supplier stood up and said, "This is Africa boet, we do things different here!".

Indeed we do, and **sadly it is not always for the better**. Polymer pipe systems for hot and cold water applications have been around for well **over twenty years internationally**, and the tragedy is that it took a **rapid hike in the copper price** for the industry to finally overcome its ill-informed prejudices against polymer systems, and even then it was really only a unique South African ability to "un-plumb" a house in minutes and make off with a month's salary in copper piping and brass fittings that convinced most plumbers to look for alternatives!

So yes, the **obvious advantage of polymer systems** not being susceptible to theft is a big plus in their favour. But polymer systems are proving themselves dominant in almost all global markets, and most of this has little to do with theft, they **simply function better**.

- The life expectancy of these systems is at least 50 years, indeed the SABS tests for such systems require 49 years of service when exposed continuously to 10 bar pressure at 70°C, such working conditions being highly improbable. In addition, approved polymer systems are able to deal with temperature spikes of 95°C.
- There is **no limitation on the pH value of the water transported** in polymer pipes, indeed polymer systems exhibit excellent chemical resistance, and clearly an inability to corrode and encrust.
- Many rumours have been spread **about the taste of water reticulated by polymer pipes**, yet studies conducted in European labs have been unable to prove this, indeed the reverse has been proved by studies in Denmark. Added to this is the fact that most water supplied by municipalities is piped through PVC pressure pipe, so you can see that the arguments become irrelevant.
- **Flow capacity is an issue rarely considered**, and often misunderstood. Flow rate is affected by pressure, internal bore of the pipe, the inner surface of the pipe, and turbulence caused by joints. It is fair to say that the inner bore of say a 15mm copper pipe is larger than the inner bore of a 16mm polymer pipe. However, the smoother internal surface of a polymer pipe, together with the ability to bend polymer pipe rather than install elbows for every deviation, more than compensates for a slightly narrower "passage".
- **Ease and speed of installation** across almost all polymer systems beats copper hands down. Though some will swear they can use capillary or compression fitting on

copper pipe quicker than polymer systems, this is rarely the case once proper training on the polymer system in question has taken place.

• **Heat efficiency is a growing concern** for homeowners, and the good heat insulation characteristics exhibited by polymer pipes saves the end user money by preventing the heat loss normally associated with metal pipes. The same characteristics also absorb noise traditionally associated with “rattling” metal pipes.

So, we are a few years on and though the **copper price has settled down**, the floodgates are open, and **new polymer systems arrive in South Africa every month**. The only decision for a developer/contractor now is which one to use, and perhaps here is the largest potential for problems.

Because **the South African market literally tumbled into polymer systems as a reaction to copper costs**, the **SABS standards** governing such pipe systems were **not all in place initially**. However, this has now been remedied with a lot of work from the manufacturers, the SABS and other interested parties. There is no excuse anymore for a polymer piping system not to have the correct accreditation, be that an SABS Certificate of approval, or a JASWIC Certificate of acceptance.

**Municipal byelaws prevent contractors from installing anything but approved products**, so if your supplier cannot present you with an up-to-date certificate from JASWIC or the SABS, you will most likely be breaking the law if you use their products. As Building Inspectors regain more of their authority, and **plumber registration improves compliance standards**, prepare to have any non-compliant installations ripped out. It has already begun in Cape Town and is spreading fast through the other province. Water is a scarce resource, and non-compliant products will not be tolerated by municipalities and govt. departments alike. SANS 10252 and 10254 are being updated during 2009. The current wording of these documents, whilst not specifically mentioning polymer piping systems, **does allow “other approved systems”**. It is hoped that the new versions will specifically mention polymer piping systems, but the important words are “approved systems”.

**Solar heating is a fast growing sector** of the market. SANS 10106 has been redrafted and will form part of the new SANS 10254 (part 2). This governs the connection of solar water heating systems. It specifically **requires the use of a metal pipe between the solar collector and the water storage** device (geyser), as well as a thermostatic mixing valve to be installed on the outlet of the geyser. From this point onwards, a polymer pipe system can be used. However **no polymer pipe system, monolayer or multilayer should be used between the solar panel and the geyser**. In conclusion, **Polymer pipe systems have been around for a few decades**.

That **South Africa chose not to trust “plastic pipe”** was mostly to do with the use of a cold water polypropylene plastic pipe as a hot water pipe, with the inevitable problems and bad press. **Polymer systems today account for roughly 65% of hot and cold water installations in Europe**, and though **South Africa is far behind this figure**, we are catching up fast. Commercial, functional and safety considerations make it a easy choice for all but the entrenched gain-sayers. And the industry, in the midst of a marked slow-down in the economy, needs to look at all the competitive advantage it can get. At the **top end of the market**, there is **a growing list of impressive projects completed using polymer systems**. There have been some problem projects, but failures have been traced back to poor installation practices or the use of non-compliant product. Approved polymer systems carry guarantees and are supported by solid technical back-up. When you are looking for a piping system for your next project, if you are not thinking polymer, what exactly are you waiting for?

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