

Cheap Plumbing Imports Wastes Precious Resource

South Africa's basic service delivery efforts are being seriously undermined by the use of inferior plumbing products and practices, a Water Research Commission (WRC) funded study has revealed. Lani van Vuuren reports.

Household plumbing products, materials and practices play an important part in the effective and efficient delivery of water and sanitation services. The use of good-quality plumbing products can reduce wastage of treated water and ultimately help conserve what is arguably one of the country's scarcest resources. Inferior products, on the other hand, increase the risk of failures and leakage, and can even have negative health impacts due to leaching of toxic elements from the materials used.

South African legislation requires that all plumbing components installed are improved by the South

African Bureau of Standards (SABS) or alternatively by a local authority. Municipalities generally make use of the so-called JASWIC list, compiled through the Joint Acceptance Scheme for Water Services Installation Components. JASWIC membership includes water services authorities. Once a plumbing product is supported and published on the JASWIC list, even if it does not carry the SABS mark, it becomes acceptable to be installed in any municipality that accepts the use of JASWIC approved products.

Unfortunately, South African legislation does not explicitly prohibit the importation and sale of non-compliant products. Over the last few years this has resulted in the local market being flooded with cheap, often pirated products, especially from Asian countries.

This state of affairs, in addition, to concerns over deteriorating quality of workmanship and a lack of capacity to regulate the sector, prompted the WRC to launch an investigation into the state of the South African plumbing industry. The two-year research project was undertaken by the University of Johannesburg (UJ) in partnership with the University of the Witwatersrand.

FLOODED MARKET

During the two-year study, 2 626 plumbing products, ranging from valves, to taps and cisterns, were evaluated for compliance. A total of 58% were found to be non-compliant, i.e. they were neither SABS approved nor appeared on the JASWIC list.

Valves showed the lowest level of compliance (17%) while taps showed the highest (48%). In addition, 10% of products claimed to be SABS mark holders while they were, in fact, not included in the SABS list of mark holders.

“When you go into a hardware store, chances are you will find it much easier and cheaper to purchase a non-compliant plumbing component than a compliant equivalent,” reports Prof Kobus van Zyl, Rand Water Chair in Water Utilisation at UJ and project leader on the WRC study. “These products are squeezing out local manufacturers all the while consumers are largely unaware with the problems associated with applying these products.” Regulation proved to be a big challenge. Only the City of Cape Town has dedicated water inspectors.

WASTED RESOURCE

Inferior products are increasingly finding their way into basic service delivery

developments. The project team visited several low-cost housing schemes around Gauteng to inspect their plumbing fittings. It was found that less than 10% of the fittings displayed the SABS mark.

“The general lack of quality of the products was reflected in the fact that more than half of the fittings inspected were broken or leaking. Also 50% of the toilets were leaking,” notes Prof van Zyl. “This is despite the fact that the average age of the low-cost houses visited was less than two years.”

“When you go into a hardware store, chances are you will find it much easier and cheaper to purchase a non-compliant plumbing component than a compliant equivalent.”

Low-cost housing is supplied to poor people, who cannot afford to replace faulty plumbing or pay large water accounts due to leakage. “We should be fitting high-quality products that will operate with minimum maintenance for several years, rather than saddling poor communities with cheap, inferior products which contravene South Africa’s legislative requirements,” says Prof van Zyl.

A similar investigation was undertaken in 21 rural villages in the Upper Nwanedi Basin in Venda. The area is served by 108 public standpipes, with one or two taps serving between 4 and 30 households each.

Despite having a dedicated maintenance officer several problems were observed, including broken handles, stripped heads on valves spindles, leaking gland seals and worn washers. (It was found that the maintenance officer lacked some basic tools to perform his work.)

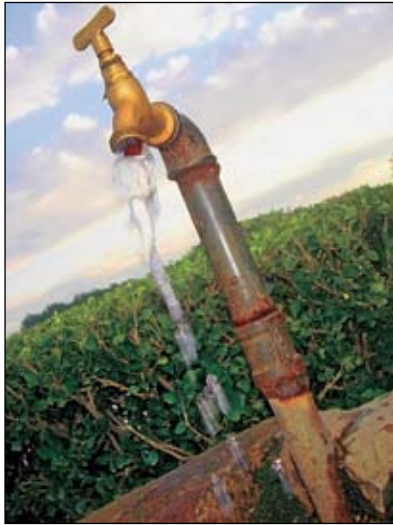
Of the 108 standpipes, only 45% had SABS approved taps, 41% had non-compliant taps and 13% had no taps at all. The maintenance officer does not purchase taps or tap components himself. Thus, the local water services authority is directly responsible for the large fraction of non-compliant fittings.

“The tap is the most important component of a standpipe installation, and has to be exceptionally robust to withstand the high wear and tear due to frequent

MAIN FINDINGS OF THE WRC FUNDED STUDY



- ◆ Nearly 60% of plumbing products are not SABS or JASWIC compliant.
- ◆ Nearly 40% of plumbers surveyed considered leakage from plumbing components to be a large or very large problem, with toilet cisterns identified as the main contributor, followed by taps, geysers, pipes and other valves.
- ◆ Plumbers and product manufacturers considered a lack of enforcement of legislation due to a lack of trained inspectors as the biggest problem in the sector at present.
- ◆ The installation of non-compliant products seems to be a particular problem in new installations and less of a problem in renovations and maintenance.
- ◆ There is a high percentage of application of non-compliant products in rural water supply schemes leading to continuous leakage and unusable standpipes.
- ◆ Less than 10% of plumbing products surveyed in low-cost housing schemes showed the SABS mark.



The tap is the most important component of a standpipe installation and has to be exceptionally robust to withstand the high wear and tear.



Non-compliant plumbing products can lead to unnecessary leakage and wastage of water.

“A beautiful structure of size is still more important than the materials which go into it. The most important element, namely the user and his convenience, is still largely ignored.”

use, occasional abuse and vandalism,” notes Prof van Zyl. “Even the best taps would have a considerably lower working life than other components in the supply system.” The project team therefore stresses the importance of a systematic procedure for maintenance and replacement of taps in rural supply systems.

INFRASTRUCTURE FOCUS

According to WRC Director Water Use and Waste Management Jay Bhagwan, the results of the study are not surprising, and confirm many concerns and suspicions. “The plumbing sector is

poorly managed and regulated, which is why it has become the dumping ground for so many non-compliant products. We have also discovered that there is a lack of synergy between different legislations and national departments’ responsibilities, which is allowing the situation to escalate.”

Bhagwan believes that one reason for the high percentage of non-compliant fittings found in basic service delivery developments is that too much emphasis is still placed on the bulk infrastructure aspects of such projects. “In housing, for example, a beautiful structure of size is still more important than the materials which go into it. The most important element, namely the user and his convenience, is still largely ignored.”

The use of a cheap import, which is guaranteed to fail within a few weeks will have huge repercussions on the functioning of a water supply system, notes Bhagwan. “Similarly, in our drive for efficient water use very little is achieved when the cheapest, inefficient devices are used in basic service delivery.”

Unfortunately there are still unscrupulous contractors who merely get involved in basic services development contracts to ‘make a quick buck’. “These contractors are rarely caught or held responsible when a cheap tap fails within the first week. It is also the item totally neglected by site engineers,” says Bhagwan.

It is believed that this study has uncovered what may be a much larger problem, and the project team has called for a full-scale, national, investigation into the state of plumbing fittings in low-cost housing developments. “We cannot allow the most vulnerable people in society to be exploited in this way. The WRC will continue to fund new research to not only expose bad practice, but find practical solutions to these challenges,” reports Bhagwan.


At the time of going to press the final report on the state of plumbing in South Africa was being published. 

TABLE 1 Compliance of plumbing products found				
Plumbing components	Compliant products		Non-compliant products	
	Number of	Fraction	Number of	Fraction
Valves	6	17%	30	83%
Bidets	78	27%	194	71%
Showers	136	36%	247	64%
Cisterns	23	37%	40	63%
Geysers	13	37%	22	63%
Pipes	216	43%	281	57%
Taps	672	48%	698	52%
Total	1114	42%	1512	58%
Grand total	2 626			