



WATER IN ACTION

Partnerships

Knowledge

Solutions

Supporting WSUP by training water engineers in Lusaka

Water and Sanitation for the Urban Poor (WSUP) is a non-profit partnership between the private sector, NGOs and research institutions focused on solving the global problem of inadequate water and sanitation in low-income urban communities. Borouge and Borealis became members of WSUP in 2007 as part of their “Water for the World” initiative.

WSUP are undertaking a programme in the Kanyama district of Lusaka in Zambia, which includes the laying of ten kilometres of extensions to the existing water network and the construction of twenty water kiosks to provide clean water to an additional 30,000 people. Due to local conditions they decided to use PE100 pipes and asked Borouge’s Andy Wedgner to come to Lusaka to hold a workshop and undertake a site inspection. When Andy visited the site he realised the full extent of the challenge and consequently recommended the use of High Stress Crack Resistant (HSCR) PE100 material in order to minimise the risk of pipeline failures due to the rocky conditions.





WSUP
Water & Sanitation
for the Urban Poor

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The Lusaka Water and Sewage Company (LWSC) are the water utility company providing water and sanitation services to Lusaka province, including the city of Lusaka, which is the capital of Zambia. Although it is a city of 1.7 million people, LWSC has less than 80,000 formal connections. This extremely low figure is because approximately 65% of the city's population live in low income 'peri-urban' areas, where the vast majority of people draw their water from public water kiosks. The water kiosks in these areas are operated by different Water Trusts, under licence from the LWSC.

The WSUP programme in Kanyama

The Kanyama Water Trust is one such organisation, which operates the water supply network in the peri-urban district of Kanyama, to the West of the city centre. It currently serves around 120,000 people from three boreholes and a series of small water towers and pipelines. WSUP are undertaking a programme in this district, part of which involves the laying of ten kilometres of extensions to the existing water network and the construction of twenty water kiosks. The aim is to increase the number of people with regular access to safe potable water by 30,000.

Very hard dolomite rock extends up to the surface in many parts of the Kanyama site,

dramatically increasing the excavation difficulties and creating a challenging environment for the buried pipelines, which are likely to be subjected to significant loads due to their shallow depth and point loads from rock fragments. WSUP therefore decided to adopt the use of PE100 pipelines, rather than the PVC-U pipelines which are generally used by LWSC.

As many of the engineers from LWSC and WSUP's local team were not familiar with PE100 pipelines WSUP requested that Borouge's Andy Wedgner, an experienced water utilities engineer, come out to hold a workshop and undertake a site visit. The aim of the workshop was to introduce local engineers to PE100 as a pipe material and to train them in the design and installation of PE100 pipelines, especially in challenging conditions, such as those faced in Kanyama."

Training the LWSC Water Engineers

The workshop was attended by 15 engineers and technical staff of LWSC, who received a comprehensive introduction to PE100 and its use in water utility networks.

On the site visit Andy realised the full extent of the challenges faced by the LWSC in laying a pipeline in such rocky conditions. He therefore recommended the use of High Stress Crack Resistant (HSCR) PE100 material in order to minimise the risk of pipeline failure due to the rocky conditions. He also recommended the extensive use of coiled pipes in order to reduce the number of joints that needed to be made on site and that simple compression fittings be used for pipes diameters up to 90 mm. For 110 mm and larger pipe sizes he recommended that wherever practical, the pipes and fittings should be butt fusion welded to provide the strongest available joints and minimise any risks to the security of the water supply.

For more information

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To know more about WSUP,
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For more information on Borouge PE100,
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SHAPING the FUTURE with PLASTICS