



Polybutene
Piping Systems Association

Case Study

Visitor Centre - Stonehenge, UK



Thermaflex | Flexalen



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Flexalen technology from Thermaflex was chosen for piping systems at the Stonehenge Visitor Centre at the iconic World Heritage site in Wiltshire, England. The designers required a flexible and sustainable piping system with a hot temperature range and low maintenance for the Visitor Centre, which invites more than one million visitors every year to the ancient site.



Photography: Peter Cook

Stonehenge Visitor Centre required an advanced technology pipe network

Positioned 2km to the west of the stone circle, but out of sight of the monument, the new visitor centre is designed to sit lightly on the rolling landscape of the Salisbury Plain and to be sensitive to its environment.

Wherever possible, the architects, Denton Corker Marshall and their contractors specified recyclable and renewable materials for the structure and its service systems. Stephen Quinlan, partner at Denton Corker Marshall, said: "Various strategies have been adopted in the design to ensure that the centre is environmentally sensitive and uses natural resources in a responsible way." The new Stonehenge Visitor Centre is proving to be an innovative example of advanced construction design and technology – from the stunning canopy roof down to the pipework infrastructure.

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Sustainability and environmental considerations were paramount

In keeping with a building which operates on a World Heritage site, sustainability and environmental sensitivity have been designed into the building function at every level, hence the decision to select innovative materials above and below ground.

In the case of the pipe network linked to the site's ground source heating scheme, hot water and space heating, the project specifiers and pipework contractor (Spectrum HPM) specified Flexalen technology from the Thermaflex company, Flexenergy.

Innovative features for world-renowned site

As Robbie McKay, Project Engineer at Bristol-based Spectrum HPM Ltd. explained: "We selected the Flexalen pipe system for this project because the Flexalen 600 pre-insulated polybutene range brought strength, flexibility, broad temperature range and strong, sustainable construction credentials to the project – qualities that were critical on such a sensitive and nationally important site."

The product range also offered closed cell, water-tight polyolefin thermal insulation and a homogenous connection between insulation and casing pipe as part of a fully welded system.

The laying process of the pipework was closely controlled because of the rich archaeology associated with the site, with ductwork for services laid within a 2m infill on a landscape hollow on which the building is located.

"We are very proud to be associated with such a prestigious project on a world-renowned site," said Sandy Fairley, Flexenergy Sales Director. "The pipe technology selected by Spectrum HPM for the visitor centre combines strength, durability and flexibility across a wide hot water temperature range when compared to conventional pipe. It's light weight profile also made it easier to handle, while its HDPE outer jacket gives robustness to the structure."

Optimising energy efficiency

"One of the biggest concerns for this project was environmental sustainability – so the low thermal conductivity and consequent low heat loss of the selected pipe technology became important factors in the context of optimising energy efficiency in a low carbon environment."

Flexalen pre-insulated pipes use Polybutene-1 (PB-1) as the base material for their carrier pipes, and is the only plastic pipe system currently used in heating systems that can be fully fusion welded and operate up to 95°C. The Stonehenge Visitor Centre sits in a shallow hollow and consists of two simple rectangular pods housing a cafe, with retail space and educational facilities plus a smaller ticket booth.