

“Beckton”: SIMONA® PE 100 pressure pipes for UK’s first large-scale desalination plant



Feed lines made with large-size SIMONA® PE 100 pipes; Welded pipe sections prefabricated at the factory using PE 100; Brackish water storage tank with PE 100 feed pipe, OD 1000/1200 mm

Climatic changes, population growth and an expected increase in consumption as a result of the 2012 Summer Olympic Games in Greater London are making it more and more important to develop drinking water resources in the UK. To this end a seawater desalination plant has been built in Beckton. The material and product of choice: corrosion-resistant SIMONA® PE 100 pipes. They were used to implement numerous customised engineering solutions over the entire period of construction.

The project at a glance

Project

Thames Gateway Seawater
Desalination Plant – Beckton

Requirements

- Water removal only possible at low tide
- High resistance to salt water
- Excellent corrosion resistance

Client

Thames Water, UK

Contractor

Acciona Agua, Spain

Plastic construction work/assembly

Pipex Ltd., UK
ProMinent Systems, CZ

Technical support

SIMONA UK Limited
Applications Technology – Piping
Systems SIMONA AG

Products used

- PE 100 pipes and fittings (OD 32 – 1200 mm)
- PE 100 welded pipe sections (OD 710 – 1200 mm)

Duration of project

Summer 2008 to May 2009



Raised PE 100 collecting main below the filtration modules; PE 100 welded pipe section, OD 900 mm SDR 17 incl. reinforced tee PN 10; Prefabricated frame structure made with PE 100 for inserting the osmosis filtration modules horizontally

SIMONA® PE 100 pipes for seawater desalination in the UK

Initial situation

Water is often in short supply in London and Oxford when conditions are particularly dry. Seawater desalination plants – planned and constructed with plastic pipes for transporting brackish water and filtered drinking water – are innovative solutions for meeting a constant rise in water consumption on a sustainable basis.

Task

On the north bank of the River Thames the supply network had to be expanded in order to develop new drinking water resources. The raw material used for components installed at the seawater desalination facility had to provide the following benefits:

- Excellent corrosion resistance
- Extended service life of up to 100 years
- Ultra-smooth inside surface to avoid incrustations
- Permanently tight welds
- High resistance to salt water
- Appropriate national drinking water approval

Solution

Corrosion-resistant SIMONA® PE 100 pipes are the ideal transport system both for salt water and for filtered drinking water. The Thames is subject to tidal influence in the section of the river to be used by the facility. Water is only removed from the river at low tide because then the proportion of salt in the water is lowest. The method used to produce drinking water is reverse osmosis. Raw water is filtered to obtain drinking water with the aid of a defined pressure and specially developed osmosis membranes. Applying this method and using 100 per cent renewable forms of energy, the regional utility, Thames Water, produces around 140 million litres of drinking water a day in an environmentally friendly way at an acceptable cost.

SIMONA® PE 100

Properties

- Notch resistance
- Long service life
- Strong, integral and permanently watertight welded joints
- No incrustation
- Excellent hydraulic properties due to very low wall roughness
- High abrasion resistance
- High corrosion resistance
- High flexibility
- Good chemical resistance
- Good storage properties due to insensitivity to frost and ultraviolet radiation

Range of products

- Pipes
- Fittings
- Electrofusion fittings
- Flanges
- Sheets
- Solid rods
- Profiles and welding rods

Further information:

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