



## SIMONA® PP-H AlphaPlus® Piping Systems for the biggest desalination plant in the US



Left: view of distribution system – customised design consisting of pipes, fittings and flanges with required pressure ratings; top right: SIMONA® injection-moulded bends possess very good hydraulic properties; bottom right: SIMONA® PP-H AlphaPlus® Pipe with outlet points in requisite pressure ratings

According to a recent study conducted by the OECD, climate change and the associated shortage of water represents one of the most serious challenges facing many regions around the globe. Corrosion-resistant SIMONA piping systems are playing their part in tackling this problem. The highly resilient pipes, fittings and flanges with NSF certification for use in drinking water applications were installed in the largest seawater desalination plant in the western hemisphere – in Carlsbad, California.

### The project at a glance

#### Project

Construction of the Carlsbad desalination plant in California; treatment of drinking water for a population of approx. 500,000

#### Product requirements

- Special NSF certification for drinking water
- Good resilience to saltwater
- Excellent corrosion resistance

#### Client

San Diego County Water Authority

#### Contractor

- IDE Technologies Ltd.
- Poseidon Water
- Alexandrovitz Ltd.

#### Technical consultants

SIMONA AG  
Pipes and Fittings division

#### Eingesetzte Produkte

- SIMONA® PP-H AlphaPlus® Pipes  
d 32 mm to 450 mm, SDR 11
- SIMONA® PP-H AlphaPlus®  
Fittings and Flanges  
d 32 mm to 450 mm, SDR 11

#### Project duration

2 years



left to right: SIMONA® PP-H AlphaPlus® Products; exhibit of a header with various outlet points and joining solutions by SIMONA

## SIMONA® PP-H AlphaPlus® – meeting the most exacting standards in drinking water treatment

### Initial situation

The west coast of the United States has been affected by severe periods of drought in the last 20 years, with 2011 proving particularly difficult for the region. This situation has led to a significant shortage of natural water resources. Against this backdrop, in 2013 project development specialist Poseidon Water, California, announced plans with IDE Technologies to build the biggest and most advanced seawater desalination facility in the US – the Carlsbad desalination plant.

### Task

The products to be used in the new-build project had to meet exacting standards. Alongside excellent corrosion resistance, an essential prerequisite for drinking water applications, the piping system has to be highly resilient to saltwater:

- Minimal incrustation
- High impact resistance
- High pressure resistance
- Excellent resistance to various acids, alkalis and solvents
- Reliable corrosion protection
- Fine and stable crystalline structure
- Excellent welding properties thanks to thermodynamic stability
- NSF certification for the US

### Solution

Working in close cooperation with its long-standing partner Alexandrovitz, SIMONA was instrumental in implementing this engineering project. SIMONA suggested the use of PP-H AlphaPlus®, a specially nucleated homopolymeric polypropylene (PP-H) that offers a number of advantages with regard to product properties and processing capabilities. Drinking water is produced by means of reverse osmosis. As part of this method, untreated water is filtered to create potable water by using specially developed osmosis membranes at a defined pressure. Therefore, the piping system to be used would have to be able to operate effectively when exposed to pressure. Another key requirement was the national NSF certification. Thanks to its ultra-smooth interior surface, SIMONA® PP-H AlphaPlus® also met this specification. Since 2015, the huge seawater desalination plant in California has been producing close to 200 million litres of drinking water per day.

### SIMONA® PP-H AlphaPlus®

#### Properties

- High chemical resistance
- Maximum stress crack resistance
- High impact resistance
- Reliable protection against corrosion
- Fine and stable crystalline structure
- Good hydraulic properties due to smooth pipe interior
- General DIBt approval for moulding compound PP-H AlphaPlus® (certification no. Z.40.25-424)

#### Product range

- Pipes, fittings, flanges

### Further information

#### SIMONA AG

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