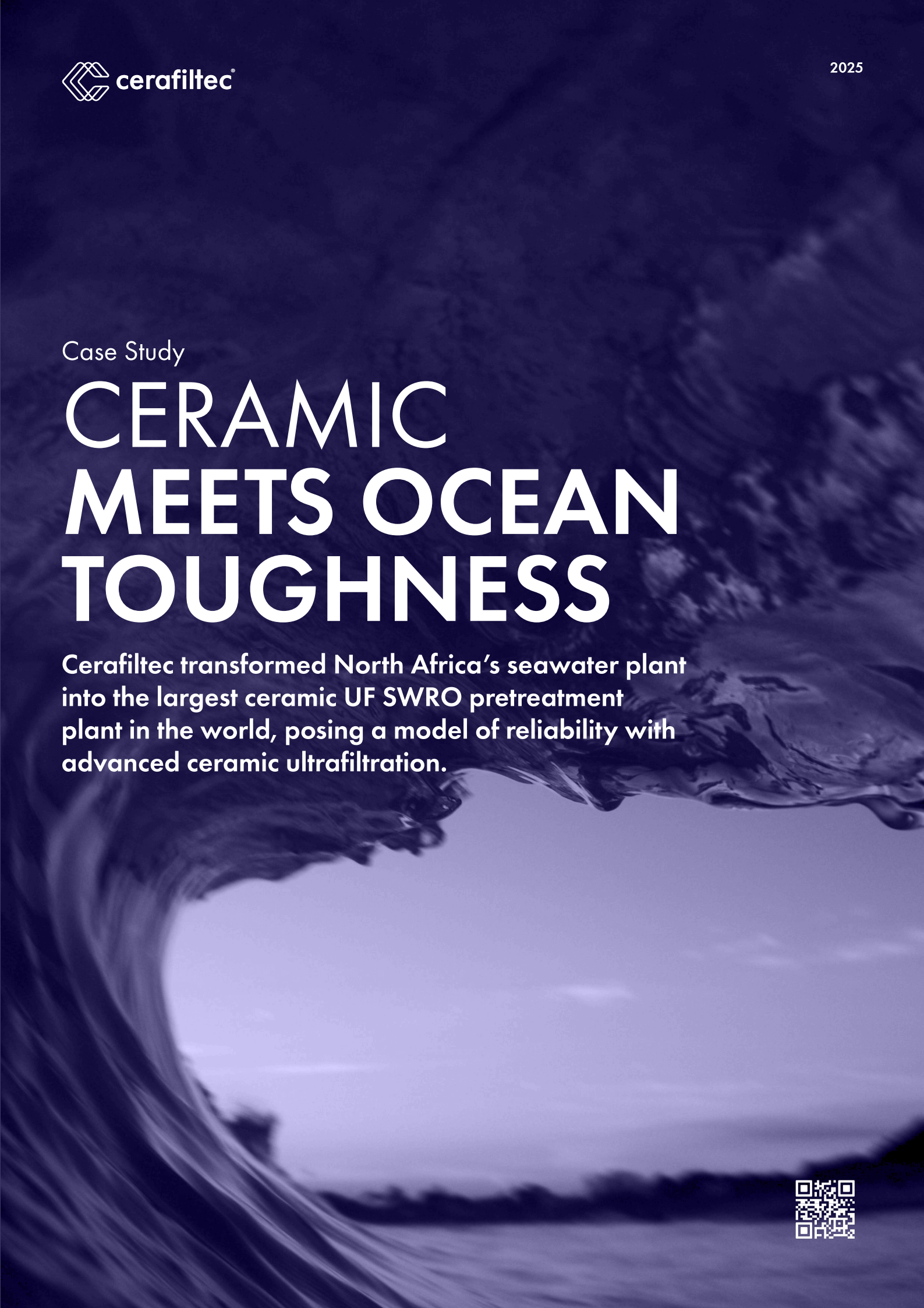
cerafiltec

2025

Case Study

CERAMIC MEETS OCEAN TOUGHNESS

Cerafiltec transformed North Africa's seawater plant into the largest ceramic UF SWRO pretreatment plant in the world, posing a model of reliability with advanced ceramic ultrafiltration.



DELIVERING RELIABILITY AND RESONANCE **WHERE THE OCEAN TESTS LIMITS**

Cerafiltec transformed North Africa's seawater plant into the largest ceramic UF SWRO pretreatment plant in the world, posing a model of reliability with advanced ceramic ultrafiltration.

Cerafiltec delivered a state-of-the-art ceramic ultrafiltration (UF) system to strengthen and protect the customer's reverse osmosis (RO) operation. The system treats 149,000 cubic meters of seawater per day (39.4 million gallons) from the Atlantic Ocean, making it the largest installations of its kind in the world.

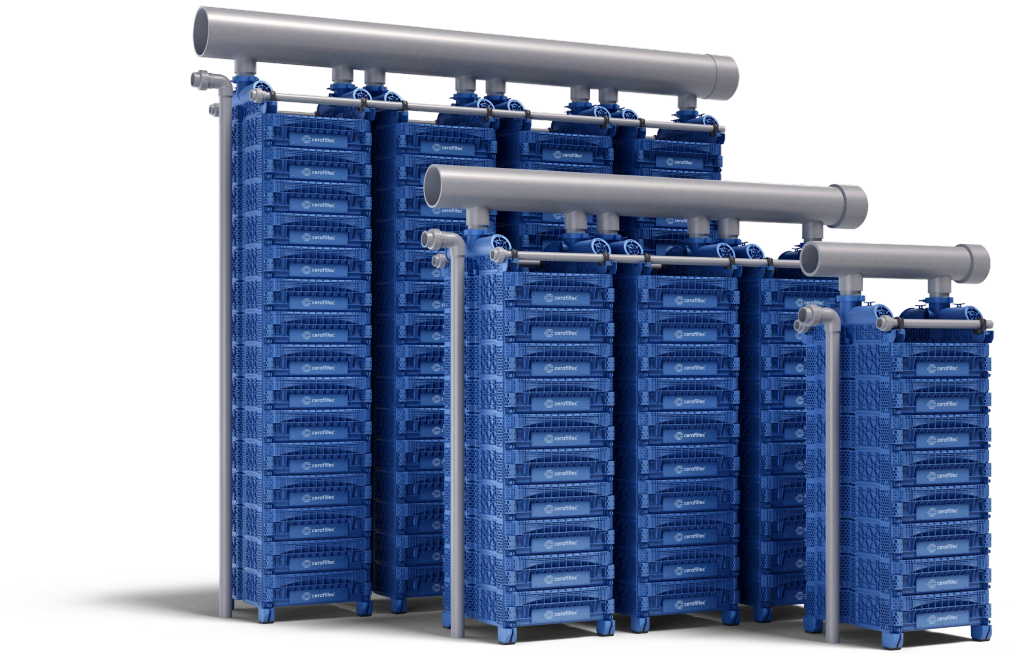
The setup includes over 5,000 ceramic modules arranged in 14 filtration trains, achieving a 94% recovery rate while ensuring a continuous supply of clean, high-quality water for RO treatment. The durable ceramic design resists fouling, allows for more aggressive cleaning, and avoids the common issues of polymeric membranes such as fiber breakage and complex maintenance.

Even in seawater with high algae content (Chlorophyll: 40 µg/l) and elevated total organic carbon (TOC), the system delivers outstanding clarity and consistency, reducing RO downtime and extending membrane lifespan. Designed and delivered on a fast-track schedule, the project combined strong engineering, efficient project management, and local collaboration to meet tight deadlines without compromising reliability. The result is stable operation, simplified maintenance, and a new global benchmark for seawater pre-treatment performance

"Nature is not to be conquered but understood." - Francis Bacon

Key Facts

KPIs



Fact	Solution
Filtered water capacity	**39.4** of seawater from the Atlantic Ocean
Daily filtered water capacity	**149,000** m^3/day
Location large chemicals & mining company	**North Africa**
Performance	**94%** recovery (stable in high-algae, high-TOC seawater)
System scale ceramic modules	**5,000** across 14 trains
Technology	**Ceramic UF**

Operational advantage → eliminates polymer failures fouling · fiber breakage · complex cleaning