



BACKGROUND

In order to provide additional drinking water to the country, Kibbutz Maagan Michael built a small desalination plant, utilizing brackish water taken from wells drilled on the kibbutz.

In other desalination plants **Filtersafe** filters replace cartridges, in this case the plant decided to utilize **Filtersafe's** filter as a prescreen before the RO protection cartridges. The kibbutz was looking for a filter to aide the delicate 1 micron cartridges being used for the RO membrane protection.

UNIQUE CHALLENGES

The well water to be desalinated was quite challenging, often filled with sand and silt that could quickly block the cartridges and require large amounts of energy to force the same quantity of water through the clogged cartridges or require frequent, costly replacement of the cartridges.

The filter being sought would allow the kibbutz to save time, labor, and money by protecting and expanding the life of the cartridges.

In order to assure the kibbutz was getting the best functioning filter at the best price, **Filtersafe's** automatic filtration solution was placed up against another well-known automatic filter.

The Criteria The Filters Were Being Judged Against:

- Easy maintenance
- Excellent separation efficiency
- Clean-in-place (CIP) characterization (due to Fe & Mn)
- Highest recovery rate
- Durability

INDUSTRY

Desalination

LOCATION

Israel

APPLICATION

RO Membrane Protection

FILTERSAFE

- 30 years filtration experience
 - 3000+ installations
 - 10 microns upwards & 50-5,000 m³/hr
 - Modular filter technology
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View of installation: 7 TTN 20K Filters.





BENEFITS TO CUSTOMER

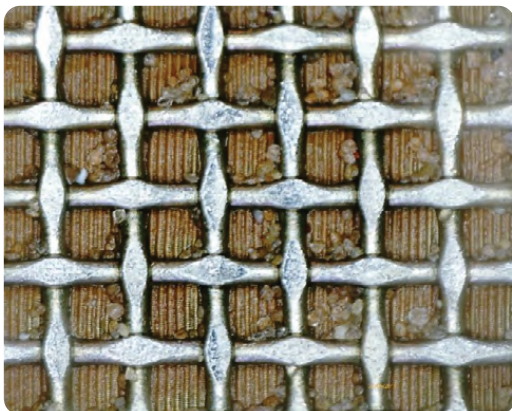
For the pilot **Filtersafe** offered one filter (BSL025) with two different screen dimension (25 and 10 microns) to see which would better meet the plant’s RO membrane protection needs. After 1 year pilot period, the kibbutz made their decision. **Filtersafe was chosen over the competing automatic filter in the pilot study because:**

1. **Filtersafe’s** screen had excelled in removal of solid particles, especially small particles (from 1-30 microns in size) for both the 25 micron and 10 micron screens. Superior solid separation over the competitor is an indication for better RO protection.
2. **Filtersafe’s** filter had a better recovery rate than the competitor’s filters (as high as 99.75%).
3. **Filtersafe’s** filter had shown ease of maintenance, in an horizontal position, with a swing lid, allowing maintenance by a single person.
4. The filter was facing extreme abrasive conditions due to the many sand particles in the feed. **Filtersafe’s** unique **Ultranozzlex** had demonstrated excellent durability.
5. CIP was successfully introduced, to fight scaling issues, for which the site is known for (mainly by Fe and Mn).

The kibbutz purchased 7 **TITAN 20K** models, which were installed August, 2023.

FILTERSAFE’S SOLUTION

Client	Kibbutz Maagan Michael
Location	Israel
Product	7 TTN 20K
Filtration Degree & Screen Internals	10 µm smartweave™ multi-layered sintered 316L stainless steel screen
Flow Rate	800 m ³ /h
Filter Body	Carbon Steel body with external high temperature epoxy coating
Installation Date	2023
Water Source	Brackish Water



At Maagan Desalination we are always looking for ways to improve our business - whether it is with the technology we use or the processes we employ. We had been using a different filtration solution that provided filtration down to 25 microns, but the brackish groundwater being filtered has very fine particles that were making their way through the filters and damaging both the cartridge and RO membranes.

In our search for a filter that could do a better job of protecting the cartridge and RO membranes, only Filtersafe was able to offer us filtration down to 10 microns.

In addition to this critical feature, their filters are the easiest to maintain. The filters are horizontal, so it's easier and safer for my staff to access them. The TITAN filters are easy to open, access the screen, and put back together. We don't have to touch the motor to reach the screen - it's all designed for convenient maintenance. In addition, because Filtersafe started on ships, they know how to keep each filter's footprint as small as possible.

Barak Horvitz, CEO of Maagan Desalination Ltd. in Kibbutz Maagan Michael.

The filter utilized in the pilot (BSL025), along with the sand and silt the filter successfully removed in order to protect and extend the life of the plant’s 1 micron cartridge.

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