

Protecting Your RO Investment

Considering the significant cost factors for today's RO filtration systems, protecting that investment becomes an economic necessity. Virtually all RO manufacturers specify a feed water stream with < 1.0 NTU (nephelometric turbidity units) and a Silt Density Index (SDI) of < 3.0. For the purpose of presenting a fair comparison of commercially available prefilters, Argonide tested their NanoCeram® filter cartridge against the offerings of two market leaders which are often used as prefilters for RO systems. The results are listed in Table 1 below for purposes of comparison:

Table 1. Turbidity Reduction & Silt Density Index (SDI₃₀) for filtered A2 Fine dust suspension and/or Municipal tap water through cartridges

Manufacturer	Type	Flow Rate (GPM)	Type of water	Turbidity, NTU		SDI ₃₀ ^a
				in	out	
Argonide (NanoCeram®)	P2.5-10 2.5" x 10"	4	A2 dust ^b in RO water	252.00	<0.01	0.2 ± 0.3 ^c
			Municipal tap water	0.87	<0.01	0.5 ± 0.1 ^d
"A"	1µ Absolute 2.5" x 10"	4	A2 dust ^b in RO water	239.00	60.00	ND ^e
			Municipal tap water	0.54	0.10	4.4 ± 0.2 ^f
	0.35µ Standard 2.5" x 10"	4	A2 dust ^b in RO water	239.00	55.00	ND ^e
			Municipal tap water	0.57	0.14	4.6 ± 0.2 ^f
"B"	1µ Standard 2.5" x 20"	4	Municipal tap water	1.3 ± 0.1 ^g	0.4 ± 0.1 ^g	N/A
	1µ Absolute 2.5" x 10"	4	A2 dust ^b in RO water	243.00	23.00	ND ^e
			Municipal tap water	1.3 ± 0.3 ^g	<0.01 ^h	5.5 ± 0.2 ^f
5µ Standard 2.5" x 20"	4	Municipal tap water	1.5 ± 0.7 ^g	1.1 ± 0.4 ^g	ND ^e	
"C" *	0.1µ Hollow Fiber Membrane 6.5" x 85" Module	22	N/A	N/A	<0.08	< 2.0 - 3.0

* Manufacturer's published specifications. This unit was not independently tested by Argonide.

Notes:

- a) Silt Density Index (SDI₃₀);
- b) ISO 121030-1, A2 Fine Test Dust available from PTI technology Inc.;
- c) Average of six measurements;
- d) Average of four measurements;
- e) Not done since turbidity of filtered water is unacceptable high (expected to be less than 1 NTU);
- f) Average of three measurements;
- g) Average over 3 hrs test;
- h) During first 30 minutes of run;
- i) After 30 minutes of continuous water run.

The NanoCeram® filter cartridge exhibits a significant advantage in removing submicron particulate when compared to other commercially available filter cartridges typically used as prefilters to RO systems. Virtually all RO membrane manufacturers specify a minimum quality for the feed waters to their systems in order to maintain system integrity and an economical return on investment. Even under extreme loading, NanoCeram® yields NTU values BDL (below detectable limits) providing long-lasting protection of RO and even UP membranes susceptible to premature fouling.

SDI

RESULTS

CONCLUSION