

Ultrafiltration Systems

newterra offers high performance Ultrafiltration (UF) systems for product recovery or treatment of process water and wastewater. UF is a low-pressure filtration process where components of a liquid are separated through pores of a semipermeable membrane based on the difference in their molecular sizes.

newterra's UF systems effectively separate contaminants from liquid such as:

- Suspended solids – to below 10 ppm
- Oil & grease – to below 50 ppm
- Metals (Mn, Pb, Cu, Ni, Cr, Fe) up to 99% rejection under pH control, typically below 1 ppm.

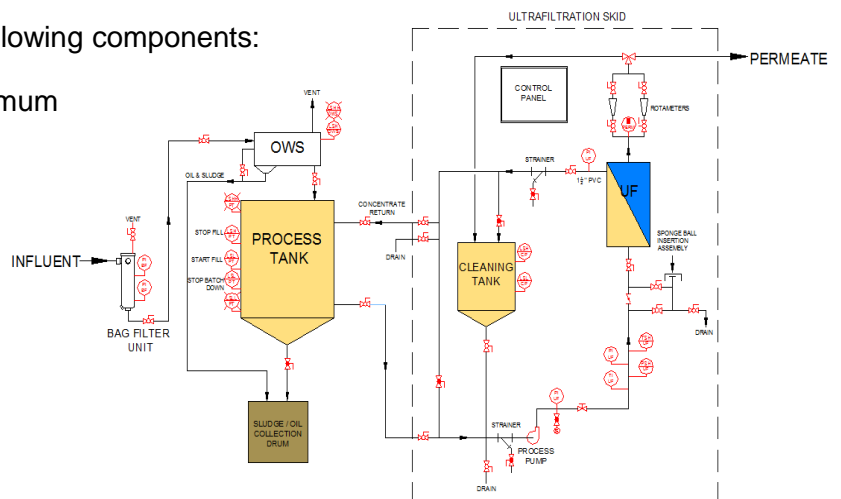
Typical **newterra** UF applications:



Alkaline cleaners	Flexographic ink	Primary metals
Air compressors	Food processing	Printing
Blowdown water	General metalworking	Pulp and Textiles paper
Can making	Mop water	Smoke scrubber water
Chemicals	Parts washers	Textiles
Cutting and grinding fluid	Power washers	Waste collection

Each **newterra** UF System consists of the following components:

- Equalization Tank (Recommended minimum 1 day holding capacity)
- Pre treatment package
 - Transfer pump
 - Oil water separator
 - Particulates Micro-filtration
- Process tank
- Permeate tank
- Ultrafilter Processing System
- PLC Control System
- Automatic Sponge ball cleaning system





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Specifications

Housing Material	PVC (polyvinylchloride) or SS 304
Membrane Material	PVDF (polyvinylidene fluoride) or PS (polysulfone)
Nominal Membrane pore size	0.02 microns (120,000 Dalton MWCO)
Membrane are tubular in shape with diameter	1 inch
Standard commercial module lengths	5 ft and 10 ft
Membrane Surface area	10ft membrane - 2.2 ft ² 5ft membrane - 1.1 ft ²
Average flux	30 - 50 GFD (gallons/ ft ² / day)
LIMITATIONS	- Chlorinated solvents not allowed - Silicones not allowed

Note: Main power to control panel at 575 volts, 3 phase, 60 Hz

Operation Limits

Characteristics	newterra Tubular Membrane Modules (10ft length)
Maximum operating pressure at pass inlet	70 psig (4.83 bar)
Maximum operating pressure at pass outlet	20 psig (1.38 bar)
Minimum operating pressure at pass outlet	10 psig (0.69 bar)
Maximum back pressure at permeate outlet	5 psig (0.3 bar)
Pressure drop at 30 GPM/tube	4.3 psi (0.29 bar)
Membrane surface area per tube	2.2 ft ²
Maximum operating temperature	130o F (54.4o C)
Allowable pH (continuous exposure)	2.0 – 10.0 @ 130o F (54.4o C)
Hold up volume per tube	0.437 gal (0.0584ft ³)

Model number / Dimensions (L x W x H)	Flow rate (Gallons per day) (Nominal to Expandable)
UF 4 (1.5 x 4 x 5)	132/500
UF 4-8 (4 expandable to 8) (10 x 6 x 7.5)	264/1000 to 528/1,998
UF 4-12 (4 expandable to 12) (10 x 6 x 7.5)	264/1000 to 792/2,998
UF 8-12 (8 expandable to 12) (10 x 6 x 7.5)	528/1,998 to 792/2,998
UF 16-24 (16 expandable to 24) (12 x 4 x 7)	1,056/3,997 to 1,584/5,996
UF 48-72 (48 expandable to 72) (12 x 6 x 6)	3,180/12,037 to 4,740/17,943
UF 96-108 (96 expandable to 108) (12 x 10 x 7)	6,330/23,962 to 7,140/27,028