

Demineralizer Design Recommendations

SEPARATE BED UNITS

	STRONG AND WEAK ACID CATION UNITS	WEAK BASE ANION UNITS	STRONG BASE ANION UNITS
Service rate, normal - gpm/sq.ft.	8	6	8
Service rate, maximum - gpm/sq.ft.	12	10	12
Backwash rate at 68°F - gpm/sq.ft.	6	3	3*
Rinse rate - gpm/sq.ft.	8	6	8
Rinse volume** - gpm/sq.ft.	25-75	50-100	40-90
Bed depth, minimum - inches	24	24	24
Bed depth, maximum - inches	72	72	72
Bed expansion, design - percent	75%	100%	100%

*This becomes 3-4 gpm/sq.ft. for Type 2

**Rinse volume is dependent upon effluent quality desired at start of service run. Use the following values for usual design conditions:

MAXIMUM TOTAL SOLIDS	MAXIMUM CONDUCTANCE	RINSE VOLUME
5 ppm	25 mmhos	80 gal/cu.ft.
3 ppm	15 mmhos	120 gal/cu.ft.

Regeneration flow rates and times should be obtained from separate data for individual resins.

MIXED BED UNITS

Service rate, normal	15 gpm/sq.ft.
Service rate, maximum	30 gpm/sq.ft.
Backwash rate at 68°F	3 gpm/sq.ft.
Anion rinse rate, normal	4 gpm/sq.ft.
Cation rinse rate, normal	6 gpm/sq.ft.***
Rinse volume, cation resin	40 gal/cu.ft.
Rinse volume, anion resin	80 gal/cu.ft.
Air mix, design	7 to 8 cfm/sq.ft. at 7-8 psig
Rising space	100%

***Cation resin is rinsed upflow at 1.0 gpm/sq.ft. minimum, or at a higher rate when required to provide minimum rinse volume during caustic regeneration of anion resin.

