

Resin Sluicing

Ion exchange resin can be sluiced through piping for transfer in and out of units. Systems that are designed for regeneration external to the service vessels must transport the resin by sluicing with water or with a mixture of water and air.

DESIGN CONSIDERATIONS

The velocity of the sluice line needs to be at least 6 ft./sec. to keep the slurry from settling to the bottom of the pipe and possibly plugging the line.

“Water only transfer” needs about 10 tank volumes of sluice water to get 99+% removal. 90% comes out in the first 2-3 tank volumes.

Using air assisted transfer takes 1 tank volume to get 95% removal and 2 to 3 tank volumes to get 99.9% removal. Air assisted transfer is much more efficient than “water only transfer.”

Overall, transfer is most efficient when the tank outlet is dead center and flat on the bottom.

SIZE OF PIPE (in.)	REQUIRED FLOW (gpm)	TRANSFER RATE (cu.ft./min.)
1 1/2	45 - 60	2 - 3
2	80 - 100	4 - 5
3	150 - 200	6 - 8

