



Vacuum Plumbing Systems

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Estimated Water Savings Using Vacuum Flush Toilets

Ex. Commercial Office Building – 500 people

Estimated savings of approximately 257,750 gal/year or 58% annual requirement

Assumptions:

- 50% male and 50% female
- Estimated water demand for bathroom fixtures 3 toilet or urinal uses/day/person
- Males use urinals 75% of the time and water closets 25% of the time

Water use calculations using conventional low flush fixtures

1. 250 males x 3 flushes/day x 0.5 gal/flush (urinals) x 75% usage = 281 gallons per day
2. 250 males x 3 flushes/day x 1.6 gal/flush (water closet) x 25% usage = 300 gallons per day
3. 250 females x 3 flushes/day x 1.6 gal/flush (water closet) = 1200 gallons per day

Total water demand = 1781 gal/day; approximately 445,250 gal/year

This example shows that approximately 3.6 gal/person/day is needed to supply water to toilets and urinals for a 500 employee office building.

Water use calculations using vacuum flush water closets and conventional urinals

1. 250 males x 3 flushes/day x 0.5 gal/flush (urinals) x 75% usage = 281 gallons per day
2. 250 males x 3 flushes/day x 0.5 gal/flush (water closet) x 25% usage = 94 gallons per day
3. 250 females x 3 flushes/day x 0.5 gal/flush (water closet) = 375 gallons per day

Total water demand = 750 gal/day; approximately 187,500 gal/year

This example shows that 1.5 gal/person/day is needed to supply water to vacuum flush toilets and conventional urinals for a 500 employee office building.